Curriculum Vitæ and Summary of Activities

(up to date as of October 2025)

Samuel Raetz
Maître de Conférences HDR (i.e., Habilitated Associate Professor),
normal class (6^{th} grade), at Le Mans Université

Laboratoire d'Acoustique de l'Université du Mans (LAUM)
UMR 6613, Institut d'Acoustique–Graduate School (IA-GS), CNRS, Le Mans Université
Avenue Olivier Messiaen, 72085 LE MANS Cedex 9, France

1 Presentation

1.1 Personal Information

Samuel Raetz
273 Chemin de la Bossifière, 72510 REQUEIL
38 years old, born on November 10, 1986, in Lavelanet (09, Ariège, France)
French nationality, Married

1.2 Contact Details and Professional Networks

Phone : +33 (0)7 54 82 02 10
Email : samuel.raetz@univ-lemans.fr
Networks : Research Gate, ORCID, Google Scholar

1.3 Curriculum Vitæ

1.3.1 Degrees

2025 **Habilitation** in Acoustics
Imaging, non-destructive evaluation and characterization of complex materials and structures by laser ultrasound
Le Mans Université

2012 **PhD** in Mechanics (with Highest Honors)
Development of numerical methods for imaging optoacoustic sources in solid media
Supervised by Bertrand Audoin and co-supervised by Thomas Dehoux
University of Bordeaux

2009 **Engineering Degree** in Mathematics and Mechanics (with High Distinction)
ENSEIRB-MATMECA, Bordeaux

2009 **Research Master's Degree** in Mechanics and Engineering (with High Distinction)
University of Bordeaux

1.3.2 Professional Career

2014-Present **Maître de Conférences at Le Mans Université (Faculty of Science and Technology)**, Research area "Opto-Acoustics, Laser Ultrasonics", team "Acoustics and Mechanics of Materials", **Laboratoire d'Acoustique de l'Université du Mans** (LAUM), Le Mans Université, UMR CNRS 6613.

2013-2014 **Postdoctoral Researcher**, Research axis "Laser Ultrasonics and Guided Elastic Waves", unconventional imaging and detection, **Institut Langevin**, ESPCI ParisTech, CNRS, PSL Université Paris, Sorbonne Université.

2012-2013 **Temporary Teaching and Research Assistant (50%)**, Laser Ultrasonics Group, Department of Physical Acoustics, **Institut de Mécanique et d'Ingénierie de Bordeaux** (I2M), University of Bordeaux, UMR CNRS 5295.

2009-2012 **PhD Student**, Laser Ultrasonics Group, Department of Physical Acoustics, **Institut de Mécanique et d'Ingénierie de Bordeaux** (I2M), University of Bordeaux, UMR CNRS 5295.

1.3.3 Awards and Distinctions

2025 **2025 ICU Early Career Award (Silver Whistle Award)** awarded by the board of the International Congress on Ultrasonics *for substantial contributions to the advancement of theoretical or applied ultrasound.*

2024 **Junior Prize**[1] awarded by the International Photoacoustic and Photothermal Association (IPPA). This prize is given every two years to an outstanding nominated candidate under the age of 40 and approved by the Selection Committee.

2022 **Outstanding Reviewer Award 2022** for the journal "Measurement Science and Technology", IOP Publishing, recognizing my invaluable service in maintaining the quality and integrity of the journal's publications.

2011 **R. W. B. Stephens Prize**, awarded for the best oral presentations at the "International Congress on Ultrasonics 2011", held in Gdansk, Poland, from September 5 to 8, 2011 (ICU'2011).

1.3.4 Miscellaneous

2021 **Doctoral and Research Supervision Bonus (PEDR)**.

1.3.5 Responsibilities

2025-Present **Elected Member of the Research Commission and the Academic Council of Le Mans Université**.

2023-2025 **Elected Member of the Board of Governors of Le Mans Université**.

2023-Present **Alternate Member of the National Council of Universities (CNU), Section 60**.

2023-Present **Scientific Lead of the Physical, Underwater, and Ultrasonic Acoustics Group** (GAPSUS) of the French Acoustical Society (SFA).

[1] Citation: "*for original contributions to non-destructive testing through laser ultrasonics, including insights into non-axisymmetric optoacoustic generation in low-absorbing materials and evaluation of adhesive bonding and fatigued materials using zero-group velocity Lamb modes; for significant advancements in refining the experimental setup, innovating signal processing techniques, and supporting theoretical analyses of three-dimensional imaging of complex transparent materials using time-domain Brillouin scattering, facilitating remarkable applications of the technique, particularly in assessing and tracking the evolution of complex materials, notably under high pressure conditions in diamond anvil cells; and for dedicated involvement in various activities and services benefiting the photoacoustic and photothermal communities.*"

2022-Present **Co-Coordinator of the Wave Physics & Acoustics track** of the Master's Program in Acoustics at the Department of Acoustics, Le Mans Université (since September).

2022-Present **Coordinator of the Laser Ultrasonics Research Group** at the Laboratoire d'Acoustique de l'Université du Mans (LAUM).

2020-Present **Coordinator of the Communication Group** at the Department of Acoustics, Le Mans Université (except during the 2023-2024 academic year).

2017-2022 **Elected Member of the Council of the Laboratoire d'Acoustique de l'Université du Mans (LAUM)**.

2017-2023 **Appointed Member of the Doctoral School Council of Le Mans Université**.

2015-2022 **Laser Safety Officer** at LAUM.

2010-2012 **Elected Doctoral Representative on the Council of the Doctoral School of Physical and Engineering Sciences at the University of Bordeaux** (ED No. 209).

2 Activity Report

2.1 Teaching Activities at Le Mans Université since September 2014

Since my arrival in Le Mans, at both undergraduate and master's levels, I have taught (italicized) or currently teach the following subjects (the lectures/tutorials (TD) and practical work (TP) under my responsibility are highlighted in blue) at the Faculty of Science and Technology, where I am assigned:

- geometrical optics (21h lectures/TD, 12h TP) in **L1** Acoustics and Vibrations (AV),
- fundamental equation and acoustic propagation in 1D (12h TP) in **L2** AV,
- numerical simulation I (27h TP, Python) in **L2** AV,
- numerical simulation II (21h TP, Python) in **L2** AV,
- plane wave in 3D (12h TP) in **L3** AV,
- elements of radiation (30h lectures/TD, 12h TP) in **L3** AV,
- electromagnetism and optics (9h TD) in **L3** AV,
- introduction to wave propagation in isotropic solids (12h TP) in **L3** AV,
- apprentice mentoring (typically 2 per year) in **LP** AV,
- Python basics for instrumentation (1h TD, 3h TP) in **M1** Wave Physics & Acoustics (WPA),
- elastic waves in solids (16h lectures, 4h TD) in **M1** WPA,
- student projects (about 3 per year) in **L1, L3, M1, and/or M2**,
- *optoacoustics and applications to NDT (10h lectures) in **M2** Acoustics research*,
- *Acoustics project (13.5h TD, 40h TP) in **L1** Science for Engineering (SPI, 2012-2017 accreditation)*,
- *Matelec project (12h math tutorials, 12h MATLAB TP) in **L1** SPI*,
- *analog signal processing (16h TP) in **L2** SPI*,
- *3D acoustics: spherical waves (13h lectures/TD) in **L3** SPI.*

In total, I have created around thirteen new practical works (geometrical optics, acoustics (L2/L3 AV), numerical simulation, Python basics for instrumentation [in collaboration with two research engineers from

LAUM]). For each course I manage, I create an online learning space on the UMTICE platform to provide students with my handouts (geometrical optics), slides (all), problem sets or homework assignments (undergraduate level), and past exam papers (undergraduate level).

My teaching workload, expressed in tutorial-hour equivalents (h eqTD), is distributed as shown in the table, with the last row indicating the percentage of these hours dedicated to practical work (TP).

Year	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26
h eqTD	128	160.5	205.5	220	217	248	250	234	219.16		214.5	229
% h TP	37.5	58	56	44	62	54	50	47	38		29.4	66

I benefited from a reduced teaching load granted to new lecturers in 2014-15 and 2015-16. The increase in teaching workload was due to the need to accommodate the rising enrollment in our programs in recent years, with a decrease observed since 2023. For the 2023-2024 academic year, I benefited from 6 months of research leave (CRCT) granted by the National Council of Universities (CNU) and 6 months of delegation to CNRS.

As part of the EUR Institut d'Acoustique – Graduate School (IA-GS), a project funded under the PIA3 Investment for the Future Program in 2017, a new international master's track, "Wave Physics & Acoustics (WPA)", was launched in September 2019 (headed by Vincent Tournat, CNRS Senior Researcher). This track aims to immerse students in research by integrating them into a research project with a team at LAUM from the first semester of M1, which they can continue in M2, with the same format during the first semester (parallel to their courses) and a full-time internship in the second semester. Compared to a traditional master's program in France, WPA students have only lectures, with fewer hours but denser content (3 modules of 40h per semester). Each module is assessed through mini-projects. Thanks to this organization, students can invest 50% of their time over two years in their research projects. Since the track's inception, I have hosted one student per master's year in the "Laser Ultrasonics" research group at LAUM: one M1 student in 2019-20 and one M1 and one M2 student each year since, except in 2023-2024, when I chose not to host an M1 student due to a lack of available supervision time. This supervision is not included in the h eqTD as we collectively decided it falls under research activities. Since September 2022, I have been **co-coordinator of this WPA track** with Guillaume Pénelet (Professor), who took on sole responsibility during my CRCT/CNRS delegation year (2023-2024), except for the recruitment process, which we managed together.

From 2020 to 2022, I also participated in an Erasmus+ Knowledge Alliance project, "ASKNOW" (2020-2022), led by Manuel Melon (Professor, Le Mans Université), involving 8 European partners: KFB (Poland), KU Leuven (Belgium), RWTH Aachen (Germany), UNIZG-FER (Croatia), Le Mans Université (France), Head Acoustics (Germany), Jazzy Innovation (Poland), and Kahle Acoustics (Belgium). The ASKNOW project aimed to develop 5 interactive online courses to integrate into the ACOUCOU platform (https://acoucou.org) developed in a previous project. Together with J.-P. Dalmont (Professor, Le Mans Université) and A. Novak (Research Engineer, LAUM), I contributed (approximately 40%) to the creation of the course on the fundamentals of acoustics (30 lessons comprising three sections: lecture, interactive content, and assessment).

2.2 Collective and Administrative Activities

2.2.1 Le Mans Université

2025-Present **Elected Member of the Research Commission (CR) and the Academic Council (CAc) of Le Mans Université.** Since March 2025 (election for the full renewal of staff and student representatives on the Central Councils of Le Mans Université), I have participated to date in 3 CR meetings and 3 CAc meetings of about 2 hours each.

2023-2025 **Elected Member of the Board of Directors (CA) of Le Mans Université**. Following the promotion of Jean-Philippe Melchior, the delegate of the FSU list for College B on the Board of Directors (a member of the CA following the 2021 elections), I accepted, being third on this list, to occupy the vacant seat starting in December 2023. During the 15 months I spent in this board, I have participated in 15 CA meetings (of 2 to 4 hours each) and have delegated my voting rights for 9 meetings (including 6 between January and July 2024, during my CRCT/CNRS delegation period).

2022-present **Coordinator of the Laser Ultrasonics Research Operation** (OR-UL) at the Laboratoire d'Acoustique de l'Université du Mans (since March 2022). This role primarily involves organizing and leading OR-UL meetings every three weeks to facilitate exchanges among the members about ongoing activities through two oral presentations per meeting, discussing scientific directions and equipment needs, and contributing to the training of students involved in the OR, both in terms of research organization and scientific exchanges.

2022-present **Co-Coordinator of the Wave Physics & Acoustics Track** of the Master's in Acoustics at the Department of Acoustics, Le Mans Université. This role was officially established in September 2022, but I began collaborating with Guillaume Pénelet **as early as May 2022** to oversee recruitment, streamline the organization of the two years of the program, and redesign the workload distribution for students in collaboration with colleagues. We drafted the syllabus and formalized a skills matrix implemented in 2022. After this intensive period, during which we each spent an average of 2 full days weekly from May to mid-July 2022, the coordination activities now require 1 to 2 hours weekly on average (preparing timetables, organizing Advanced Lectures, weekly student meetings, evaluating applications, managing excellence scholarships, handling daily affairs, updating materials for recruitment announcements, and presenting the program). Guillaume Pénelet and I share responsibility for the two years of the Master's program. Tasks are divided equally based on our availability. For example, Guillaume manages semester-specific scheduling issues for one semester, and I handle the other. During 2023-2024, I only assisted Guillaume in reviewing applications (e.g., Études en France [approximately 15 applications handled on a rolling basis] or MonMaster [about 50 applications in 2023-2024]).

2021 **Member of the Jury for the Thesis Awar Competition** at Le Mans Université. My contribution involved reviewing the 14 submitted applications (across all disciplines), evaluating them, and participating in discussions to allocate the awards.

2020-present **Coordinator of the Communication Group** at the Department of Acoustics, Le Mans Université (DAUM), responsible for internal communication within the department and the university, as well as external communication targeting future users (student fairs, open days, etc.) and the general public (scientific outreach leveraging DAUM's teaching and student projects). I was replaced in this role by Bruno Gazengel (Professor, Le Mans Université) for the 2023-2024 academic year.

2017-2022 **Elected Member of the LAUM Council** (Laboratoire d'Acoustique de l'Université du Mans). The LAUM council consists of 15 members (including 4 appointed) and meets approximately once a month.

2017-2023 **Appointed Member of the Doctoral College Council** at Le Mans Université. This council, which meets monthly, includes representatives from doctoral schools, research units, and doctoral students (34 members).

2015-2022 **Laser Safety Officer** at LAUM. This support role for the lab's director and the prevention officer involved assessing laser risks at LAUM, proposing preventive measures, raising awareness among newcomers about laser safety, and allocating 5% of my workload to this mission, as stipulated in the mission letter.

2.2.2 French Acoustical Society (SFA)

2023-present **Head of the Specialized Group** for physical acoustics, underwater acoustics, and ultrasonics (**GAPSUS**) of the **SFA**. The board consists of 16 elected members in 2023 and 2024. The board meets once a month to discuss the scientific activities of physical acoustics in France, participate in organizing the AFPAC (Anglo-French Physical Acoustics Conference) every two years in France, organize physical acoustics sessions at the CFA (French Acoustics Congress), and prepare proposals for candidates supported by GAPSUS for SFA awards and medals. I prepare the agenda and chair the GAPSUS board meetings. I also represent GAPSUS at the SFA Board of Directors (CA), which meets for a full day every two months.

2019-2022 **Secretary of the GAPSUS Specialized Group (SFA)**. The board included 18 elected members in 2019 and 2020, and 14 elected members in 2021 and 2022. The board met two to three times per year to discuss the scientific activities of physical acoustics in France, participate in organizing the AFPAC (Anglo-French Physical Acoustics Conference) every two years in France, organize physical acoustics sessions at the CFA (French Acoustics Congress), and prepare proposals for candidates supported by GAPSUS for SFA awards and medals. I wrote the minutes of the meetings.

2.2.3 National Council of Universities (CNU)

2023-present **Substitute Member of the National Council of Universities (CNU), Section 60 (Mechanics, Acoustics)**. I participated in the February 2024 meeting of Section 60 regarding the **Qualification and CRCT Procedure** (2024 session, 3 days), where I reviewed 21 qualification dossiers (requiring one to two hours of expertise per dossier).

2.2.4 Member of Conference Scientific Committees

2025 **Member of the International Scientific Committee of 2025 ICU PADERBORN** (reviewed submissions, advised on program structure, and supported international outreach).

2025 **Member of the International Scientific Committee of the Anglo-French Physical Acoustics Conference AFPAC'25** (reviewed submissions, advised on program structure, and supported international outreach).

2024 **Member of the International Scientific Committee of the Anglo-French Physical Acoustics Conference AFPAC 2024** (reviewed submissions, advised on program structure, supported international outreach, and co-edited the publication of conference proceedings in https://iopscience.iop.org/issue/1742-6596/2904/1).

2023 **Member of the International Scientific Committee of 2023 ICU BEIJING** (reviewed submissions, advised on program structure, and supported international outreach).

2023 **Member of the Scientific Program Committee of the 17th International Conference on Phonon Scattering in Condensed Matter** (Phonons2023), July 2-7, 2023, Paris, France (https://phonons2023.sciencesconf.org/). My participation in the scientific program involved suggesting names and taking part in decisions about plenary and invited presentations and offering feedback on session programs.

2.2.5 Organization of National/International Conferences, Summer Schools

2025 **Organizer of the session "Laser Ultrasonics Applications in Industry and Aeronautics" at the International Congress on Ultrasonics** (2025 ICU PADERBORN), September 21-25, 2025, Paderborn, Germany (https://2025icu.org/). The session featured 6 presentations. I received, reviewed, and sorted the accepted abstracts to propose the session program to the organizing committee.

2024-2025 **Co-organizer of the sessions "Laser Ultrasonics, Sound-Light Interaction"** (with Dr. Thomas Dehoux) **and "Development and Design of Experiments in Physical, Underwater and Ultrasonic Acoustics"** (with Adeline Bernard) **at the 17th French Acoustics Congress**, April 27-30, 2025, Paris, France (https://cfa2025.fr/).

2023-2025 **Head of the Organization of the International Summer School "Son et Lumière 2025"**, which has been held in August 18-29, 2025, at the Banyuls-sur-Mer Oceanological Observatory (https://sel2025.sciencesconf.org/). In June 2024, after researching and booking a location, as well as preparing and submitting the thematic school application to CNRS, Alexey V. Scherbakov (TU Dortmund) joined me in leading the school, and we have been working together to prepare for this 9th edition. We have been supported in this endeavor by an organizing committee of 6 people and a scientific committee of 21 international colleagues.

2023 **Co-organizer** (with Dr. Chenyin Ni and Dr. Haiyang Li) **of the session "Laser Ultrasonics Applications in Industry and Aeronautics" at the International Congress on Ultrasonics** (2023 ICU BEIJING), September 18-21, 2023, Beijing, China (https://www.2021icu.org.cn/Home/Default). The session featured 7 presentations. Along with C. Ni and H. Li, we managed the session publicity (mailing), received, reviewed, and sorted the accepted abstracts to propose the session program to the organizing committee.

2023 **Member of the Local Organizing Committee of the 17th International Conference on Phonon Scattering in Condensed Matter** (Phonons2023), July 2-7, 2023, Paris, France (https://phonons2023.sciencesconf.org/). In the local organizing committee, I assisted with receiving and setting up materials, catering, and room arrangements for the poster sessions and coordinated with the caterer for breaks.

2021-2022 **Co-organizer** (with Dr. Thomas Dehoux) **of the session "Laser Ultrasonics, Sound-Light Interaction" at the 16th French Acoustics Congress**, April 11-15, 2022, Marseille, France (https://cfa2022.sciencesconf.org/resource/page/id/7). The session included 21 presentations divided into 4 sub-sessions. Together with Th. Dehoux, we managed the session publicity (mailing, individual solicitations), received, reviewed, and sorted the 21 accepted abstracts to create thematic sub-sessions. I chaired one of the sub-sessions.

2019-2020 **Co-organizer** (with Prof. Andrey Akimov) **of the session "Laser Ultrasonics" at the e-Forum Acusticum 2020**, December 7-11, 2020, Lyon, France. The session featured 28 presentations across 5 sub-sessions. Together with Prof. Akimov, we managed the session publicity (mailing, individual solicitations), received, reviewed, and sorted the 28 accepted abstracts to create thematic sub-sessions. I chaired all 5 sub-sessions.

2018-2019 **Co-organizer** (with Prof. Andrey Akimov) **of the session "NanoPhoNonics and Acoustic Metamaterials" at the METANANO 2019 conference**, July 8-12, 2019, Saint Petersburg, Russia (https://metanano.itmo.ru/2019/). The session included 21 presentations split into 4 sub-sessions. Together with Prof. Akimov, we managed the session publicity (mailing, individual solicitations), received, reviewed, and sorted the 21 accepted abstracts to create thematic sub-sessions. I chaired one of the sub-sessions.

2016-2017 **Member of the Local Organizing Committee of the French-speaking Colloquium CMOI-FLUVISU 2017**, March 20-24, 2017, Le Mans, France (https://cmoi-fluvisu.sciencesconf.org/resource/page/id/5.html). My role in the organization included advising on finances (based on my experience as treasurer for the 2016 French Acoustics Congress) and assisting with the logistics of the congress during the week before, the week of, and the weekend after the congress.

2015-2016 **Treasurer of the 13th French Acoustics Congress joint with the VIbrations, SHocks and Noise colloquium**, April 11-15, 2016, Le Mans, France. A total of 590 abstracts were submitted, and 776 people registered. The preparation of this event took up two full months of my work time.

2011-2012 **Organizer of the Annual "Doctoral School Day"** for the Doctoral School of Physical Sciences and Engineering at the University of Bordeaux (ED n°209).

2010 **Member of the Technical Team for the 2nd International Symposium on Laser-Ultrasonics (LU2010)**.

2.2.6 Habilitation Jury

2025 **Reviewer** for the habilitation defended on June 3, 2025, by Dr. Olga Boyko, who is Maître de Conférences at Sorbonne Université and conducts her research within the "Acoustics and Optics for Nanosciences and Quantum" research team of the Institut des Nanosciences de Paris (INSP, CNRS UMR 7588). The title of her habilitation is "Advanced techniques for control and engineering of elastic waves".

2.2.7 Thesis Jury

2024 **Reviewer** (External Examiner) for the thesis defended on June 6, 2024, by Mrs. Menting YAO, conducted at the Engineering Research Department of The University of Nottingham (Nottingham, UK) under the supervision of Prof. Matt CLARK and co-supervised by Dr. Richard SMITH, Dr. Fernando PEREZ-COTA, and Dr. Rafael FUENTES DOMINGUEZ, titled "Development of GHz optoacoustic lenses for sub-optical resolution imaging."

2023 **Examiner** for the thesis defended on June 2, 2023, by Mr. Victor GAYOUX, conducted at I2M (Université de Bordeaux) under the supervision of Prof. Michel CASTAINGS and co-supervised by Dr. Mathieu RÉNIER, titled "Transmission of a bounded ultrasonic beam with normal incidence through an immersed plate. Application to localized non-destructive testing of bonded assemblies."

2022 **Examiner** for the thesis defended on November 3, 2022, by Mr. Peilong YUAN, conducted at the Laboratory for Soft Matter and Biophysics (KU Leuven, Belgium) under the supervision of Prof. Christ GLORIEUX, titled "Laser ultrasonic testing methods for crack detection and plastic deformation monitoring under dynamic loading stress."

2021 **Examiner** for the thesis defended on April 27, 2021, by Mrs. Louise LE RIDANT, conducted at I2M (Université de Bordeaux) under the supervision of Prof. Bertrand AUDOIN and co-supervised by Dr. Marie-Fraise PONGE, titled "Optimization of a multilayer optoacoustic transducer for picosecond acoustics."

2021 **Examiner** for the thesis defended on March 31, 2021, by Mr. Omar ORTIZ CABELLO, conducted at C2N (Université Paris-Saclay) under the supervision of Dr. Daniel LANZILLOTTI-KIMURA and Dr. Pascale SENELLART, titled "Coherent acoustic-phonon dynamics in GaAs/AlAs heterostructures."

2016 **Examiner** for the thesis defended on March 25, 2016, by Mr. Eleftherios ANAGNOSTOPOULOS, conducted at I2M (Université de Bordeaux) under the supervision of Prof. Bertrand AUDOIN and co-supervised by Dr. Damien SÉGUR, titled "Modeling of laser-generated ultrasounds: Application to the inspection of aeronautical and composite components."

2.2.8 Selection Committees

2022 **Expert Member** of the jury for the external CNRS competition No. 25, IR2 body, BAP C for a position at the Langevin Institute (Paris).

2022 **External Member** of the selection committee for position No. 63 MCF 0066 at the Université Polytechnique Hauts-de-France (IEMN-DOAE, INSA Hauts-de-France; Valenciennes).

2021 **Local Member** of the selection committee for position No. 60 MCF 4291 at Le Mans Université (LAUM, UFR Sciences, ENSIM; Le Mans).

2019 **External Member** of the selection committee for position No. 63 MCF 0162 at the Université Polytechnique Hauts-de-France (IEMN-DOAE, ISTV; Valenciennes).

2.2.9 Reviewer Activity for International Peer-Reviewed Journals (89 for 25 journals)

Acta Acustica (2)

Mech. Syst. Sig. Proc. (1)

AIP Advances (1)

Nano Letters (1)

 Applied Optics (5)

 Applied Physics Letters (9)

 Applied Physics Reviews (3)

 Applied Sciences (2)

 Electronics (2)

 IEEE T-UFFC (2)

 Int. J. Thermophys. (7)

 Journal of Applied Physics (10)

 J. Phys. D: Appl. Phys. (2)

 Light: Science & Applications (3)

 Meas. Sci. Technol. (3)

 Optics & Laser Technology (1)

 Optics Letters (2)

 Photoacoustics (14)

 Review of Scientific Instructions (3)

 Scientific Reports (1)

 Sensors (4)

 Smart Materials and Structures (1)

 Int. J. Acoust. Vib. (1)

 J. Acoust. Soc. Am. (2)

 Ultrasonics (7)

2.2.10 Reviewer Activity for Research Funding Agencies

2025 **Evaluator of a project under the Regional Interest Research Call for Proposals (APR IR) by the Centre-Val de Loire Region**, aimed at addressing research issues aligned with the region's priorities and policies.

2023-2024 **Evaluator for the Agence Nationale de la Recherche (ANR)** (1 project per year at step 2). This evaluation activity consists of critically assessing the scientific excellence and quality of project construction, in accordance with international principles of competitive project selection. The final evaluation of a project is justified based on its quality and scientific ambition, its organization, the potential for its realization by the consortium, its scientific impact, and its potential outcomes.

2023 **External Evaluator for the Nottingham Research Fellowship program at the University of Nottingham.** This evaluation activity consists of assessing the value of the proposed research in the project as an expert in the field. This statement should not exceed 2 pages and should comment on the quality, impact, and opportunity of the proposal.

2.3 Research Activities

Keywords: laser ultrasonics, picosecond acoustics, guided elastic waves, time-domain Brillouin scattering, imaging, non-destructive testing and evaluation, signal processing

2.3.1 Summary of my Scientific Output and Communications

My scientific output and communications, detailed below and accessible for publications on my ORCID page (https://orcid.org/0000-0003-3683-8764), are summarized as follows.

- Publication of **36 articles in peer-reviewed international journals**, including **7 articles in a special issue** of a peer-reviewed international journal.

- Submission of **6 articles to an open-access preprint archive** (arXiv), all subsequently published in peer-reviewed international journals.
- **Participation in international conferences**, including those listed below to which I regularly contribute, for a total of **113 communications**, **including 8 invited talks** that I presented in sessions I did not organize (3 in plenary sessions):
  - Anglo-French Physical Acoustics Conference – AFPAC (2011, 2013, 2017, and all since 2019) ;
  - International Conference on Photoacoustic and Photothermal Phenomena – ICPPP (since 2015) ;
  - International Congress on Ultrasonics – ICU (since 2011) ;
  - International Symposium on Laser Ultrasonics – LU (since 2010) ;
- **Participation in national conferences**, for a total of **25 communications**. The national conference to which I regularly contribute and participate in each edition is the French Acoustics Congress (CFA) organized by the SFA.
- **Invited seminar speaker**, in France and Spain, for a total of **3 seminars**:
  - Institut de Mécanique et d'Ingénierie de Bordeaux (Université de Bordeaux, France, April 13, 2023)
  - CIC nanoGUNE (Donostia-San Sebastian, Spain, November 6, 2023)
  - Institut Langevin (ESPCI Paris – PSL – CNRS, France, November 14, 2023)
- **Course in summer school**: "Fundamentals of time-domain Brillouin scattering and its applications to depth-profiling and 3D imaging of materials" (3h), at the summer school "Optomechanics & Nanophotonics" (April 17-28, 2023, École de Physique des Houches, France).

2.3.2 Overview of my Research Activities prior to Le Mans Université

Before my recruitment at Le Mans Université, during my PhD, my ATER position, and my postdoctoral research, I worked on the topics described below.

- During my PhD research on laser ultrasonics, under the supervision of Prof. Bertrand Audoin and Dr. Thomas Dehoux, I studied theoretically, numerically, and experimentally the **generation of ultrasound by a non-axisymmetric thermoelastic source**. We demonstrated the asymmetry of the **directivity patterns** of compressional and shear acoustic waves generated by such sources in optically low-absorbing media, allowing for the selection of preferred directions for acoustic wave generation through the refraction direction [A1-A3]. In my thesis manuscript, I also studied methods based on the *in silico* backpropagation of the measured normal displacement to **image optoacoustic sources in 2D and 3D geometries**, showing that the reconstruction of the depth dimension of the source is rendered impossible by the particular characteristics of cylindrical waves in the 2D case, while a good localization of the source is possible, along with the retrieval of an asymmetric signature reflecting the asymmetry of a 2D oblique volume source. In the case of a 3D volume source with axial symmetry, it was shown that the largest dimension of the acoustic source is reconstructed more accurately at the expense of the other dimension of the source, with a detailed discussion of the artifacts [Thesis manuscript].
- As a postdoctoral researcher (CNRS fellowship) at the Institut Langevin, ESPCI ParisTech, CNRS, PSL Research University, Paris, France, under the supervision of Dr. Claire Prada, I experimentally and theoretically studied the **non-destructive evaluation** of the glass/polymer coupling in a laminated glass **using Lamb modes with zero group velocity (ZGV) generated and detected by lasers** (in collaboration with Saint-Gobain Recherche, Aubervilliers, France). In this work, I studied **the effect of a non-axisymmetric thermoelastic source on the generation of ZGV Lamb modes** in optically low-absorbing plates [A4]. I also participated in the **study of interfacial stiffnesses of a three-layer**

structure using ZGV Lamb modes [A5] and utilized experimental results from **Lamb waves generated and detected by a multi-element probe** to contribute to applications of a signal processing method based on the spatial Laplace transform for the recovery of complex wavenumbers [A7].

2.3.3 Overview of my Research Activities at Le Mans Université

Since my recruitment at Le Mans Université, I have worked on the following scientific topics:

- **Picosecond acoustics for the characterization and imaging of materials under high pressures** in diamond anvil cells (polycrystals, phase change) ([A6, A9, A10, A13, A23, A31, A32], *ANR blanc LUDACism 2012-2016*, *ANR PRCE I2T2M 2018-2023*) and, at atmospheric pressure, **in thin films** (ferroelectrics ([A12, A19, A21], *LMAc scientific project "OPTOA" 2015-2019*, *ANR PRC UpDown 2018-2021*), material library [A27], low dielectric constant materials [A29]), **polycrystals** ([A14, A17, A24], *LMAc scientific project "OPACOP", 2018-2021*), **nanocoatings** [A15], **semiconductors** [A34] or **polymers** ([IC61, IC63, IC71, IC78, IC83, IC94, IC97, IC98, IC105, IC108], *ANR PRCE I2T2M 2018-2023*), using primarily longitudinal or transverse bulk elastic waves in transparent materials (**time-domain Brillouin scattering**) or opaque materials (echo detection), but also very high-frequency vibrations ($>$ 10 GHz) in coatings;

- **Non-destructive and contactless testing** of composite materials [A8] or metals [A22], bonded structures [A16, A25, A26], ductile fatigued materials [A11, A18] or cracked brittle materials ([IC49, IC57, IC92, IC109], *PAPD Université Bretagne-Loire 2017*) using, in particular, **guided elastic waves** (zero-group velocity Lamb modes, in particular);

- More recently, the propagation of surface elastic waves (Rayleigh, Sezawa) in **bio-sourced materials with phononic properties** ([A20, A35, A36], *ANR PRC "biophoNonics", 2021-2024*), guided elastic waves in a single carbon fiber (*industrial contract, Safran, 2022-2023*), and **picosecond surface acoustic waves (>30 GHz) generated and detected by laser (fs)** ([A33, IC66, IC67, IC70, IC79, IC84, IC86, IC91, IC98, IC99, IC100, IC102, IC111], *IA-GS postdoctoral fellowships 2019-2021, 2022*, *MSCA postdoctoral fellowship STSAW 2022-2024*).

Research on time-domain Brillouin scattering has notably demonstrated that this method has better axial resolution than the more conventional Brillouin light scattering technique in the frequency domain, allowing for a better characterization of elastic properties [A10, A13, A34], and that it is capable of providing 3D imaging of the complex texture of polycrystals [A6, A14, A17, A23, A24] and real-time monitoring of transient processes such as polymerization or phase transition [A9, A29]. We have developed the necessary 3D analytical theory to understand and exploit experimental results [A31] obtained in the case of complex geometry, leading to a propagation direction of the acoustic wave that is non-collinear with the electromagnetic wave probing this acoustic wave [A32].

In the context of non-destructive testing using zero-group velocity Lamb modes, the experimental results reported in [A11] demonstrated the ability of this method to (i) locate damages, (ii) predict fatigue life, and (iii) qualitatively, and potentially quantitatively, assess the cumulative damage levels during the fatigue process. The study of the attenuation of these modes showed the possibility of a quantitative measurement that differentiates the local bonding state (good, with cohesion defects, with adhesion defects), demonstrating the imaging capability of the technique [A16]. A multi-layer semi-analytical model was also developed (in Python) and made available to the scientific and industrial community (https://doi.org/10.5281/zenodo.4301720), solving the electromagnetic, thermal, and elastodynamic problems sequentially, accounting for the optical penetration of the generation laser, thermal conduction and convection, as well as various optical, thermal, and mechanical coupling conditions [A25]. We also demonstrated the possibility of monitoring the frequency of a zero-group velocity Lamb mode to (i) locate damages [A8], (ii) predict fatigue life, and (iii) qualitatively and potentially quantitatively assess the cumulative damage levels during the fatigue process [A11, A18].

2.3.4 Research Contracts

Responsibility in Public Scientific Contracts

2025-2029 **Responsible for the institution** in the ANR PRC "ALICE" project (AAPG2024), **735 k€** (LAUM : 42.5 k€), duration: 4 years

Quantitative imaging of the thermodynamics of phases in cells using Brillouin microscopy

Partners: ILM [UMR 5306 CNRS UCBL] (leader), I2BC [UMR 9198 CEA CNRS Univ. Paris-Saclay], Laboratoire Navier [UMR 8205 ENPC Univ. Gustave Eiffel CNRS], L2C [UMR 5221 CNRS Univ. Montpellier], LAUM [UMR 6613 CNRS LMU]

2021-2024 **Responsible for the institution** in the ANR PRC "biophoNonics" project (AAPG2020), **502 k€** (LAUM : 120 k€), duration: 3 years

Bio-sourced phononic materials

Partners: ILM [UMR 5306 CNRS UCBL] (leader), Laboratoire RDP [UMR 5667 CNRS ENS Lyon UCBL INRAE INRIA], IRPHIL [UR 4187 Univ. Lyon 3], LAUM [UMR 6613 CNRS LMU]

2018-2021 **Principal Investigator/Coordinator** of the Pari Scientifique "OPACOP 2018" (RFI Le Mans Acoustique, Région Pays de la Loire), **100 k€**, duration: 3 years

Development of opto-acousto-optic techniques for three-dimensional imaging of materials with nanoacoustic shear waves

Partners: LAUM [UMR 6613 CNRS LMU] (leader), IMMM [UMR 6283 CNRS LMU], LSPM [UPR 3407 CNRS], D.H. Hurley (USA), O. Matsuda (Japan)

2017 **Project leader** for a project awarded by the "Post-Doctoral Attractiveness Program" (PAPD) of Université Bretagne Loire (2017 campaign, Industry Department), **60 k€**, duration: 1 year

Non-destructive testing of cracked and fatigued materials by linear and nonlinear resonance of zero-group velocity Lamb modes

Participation in Public/Private Scientific Contracts

2025-2026 **Participant** in a MITI CNRS project on *The broad spectrum of sound: from cognitive to quantum* named "Opto-acoustic method for armor characterization", **28 k€**

Partners: ICMMO [UMR 8182 CNRS Université Paris-Saclay] (leader), LAUM [UMR 6613 CNRS LMU]

2022-2024 **Participant** in the work carried out within the framework of a **Marie Skłodowska-Curie Actions (MSCA) postdoctoral fellowship**: *Sub-THz surface acoustic waves (STSAW)*

2022-2023 **Industrial contract with SAFRAN**: *Characterization of the elastic properties of a single carbon fiber using surface elastic waves in picosecond acoustics.*

2022 **Participant** in the work carried out within the framework of a **postdoctoral fellowship funded by the Institut d'Acoustique – Graduate School (IA-GS)**: *All-optical generation and detection of sub-THz surface acoustic waves*

2020-2021 **Participant** in a MITI CNRS project on *New Materials* named "Bio-based phononic materials", **30 k€**

Partners: ILM [UMR 5306 CNRS UCBL] (leader), Laboratoire RDP [UMR 5667 CNRS ENS Lyon UCBL INRAE INRIA], LAUM [UMR 6613 CNRS LMU]

2019-2021 **Participant** in the work carried out within the framework of a **postdoctoral fellowship funded by the IA-GS**: *Opto-acoustic and acousto-optic transducers for above 100 GHz surface acoustic waves*

2018-2022 **Task leader** in the ANR PRCE "I2T2M" project, **391 k€** (LAUM : 250 k€), duration: 4 years

In situ three-dimensional opto-acousto-optical imaging of material transformations at the nanometric scale

Partners: LAUM [UMR 6613 CNRS LMU] (leader), IMMM [UMR 6283 CNRS LMU], LSPM [UPR 3407 CNRS], SAFRAN, NETA

2018-2021 **Participant** in the ANR PRC "UpDown" project, **475 k€** (LAUM : 92 k€), duration: 3 years

Ultra-fast photostriction in domains, walls, and ferroelectric nanostructures

Partners: IMMM [UMR 6283 CNRS LMU] (leader), LAUM [UMR 6613 CNRS LMU], SPMS [UMR 8580 CNRS CentraleSupélec], C2N [UMR 9001 CNRS Univ. Paris-Saclay]

2018-2019 **Participant** in the CNRS Instrumentation aux limites "BioPAN" project, **29 k€**

Partners: IMMM [UMR 6283 CNRS UCBL] (leader), LAUM [UMR 6613 CNRS LMU]

2018-2019 **Participant** in the work carried out within the framework of a **postdoctoral fellowship funded by the Acoustic Hub®** (Région Pays de la Loire project): *Opto-acousto-optical quantitative imaging of material elasticity and grain boundaries*

2017-2020 **Co-supervisor of the CIFRE thesis of Romain Hodé, co-financed by SAFRAN** and the National Association for Research and Technology (ANRT): *Development of laser ultrasonic methods for the nondestructive evaluation of bonded aeronautical assemblies*

2015-2019 **Participant** in the Pari Scientifique "OPTOA 2015" (RFI Le Mans Acoustique, Région Pays de la Loire), **150 k€**, duration: 3 years

GHz ferroelectric optically controlled acoustic transducers

Partners: LAUM [UMR 6613 CNRS LMU] (50% lead), IMMM [UMR 6283 CNRS LMU] (50% lead), A. Lomonosov (Russia), O. Matsuda (Japan)

2014-2016 **Participant** in the ANR blanc "LUDACism" project, **480 k€** (LAUM : 157.6 k€), duration: 4 years

Laser ultrasonics in diamond anvil cell for investigation of simple molecular compounds at ultrahigh pressures

Partners: LAUM [UMR 6613 CNRS LMU] (leader), IMMM [UMR 6283 CNRS LMU], LSPM [UPR 3407 CNRS]

2.3.5 National and International Scientific Collaborations since September 2014

The Laser Ultrasonics research group I joined upon arriving at Le Mans is definitively focused on scientific collaborations. I have thus benefited from numerous ongoing collaborations and helped develop new ones through my previous work and/or professional relationships. It is also clear that the strategic projects underway at LAUM when I arrived, such as the RFI LMAc and Acoustic Hub® (see international collaborations), complemented the dynamism of the permanent members of the research group in terms of collaborations. The lists of national and international collaborators below briefly present the collaborations I have been involved in or helped initiate (highlighted in blue) for LAUM, as well as a list of joint projects and publications (conference presentations, although present, are not listed here).

Collaborations at Le Mans Université

- IMMM, UMR 6283 CNRS, Le Mans Université
  - Pascal Ruello, Gwenaëlle Vaudel, Vincent Juvé. Joint projects and publications: ANR *Up-Down*, Pari Scientifique LMAc "OPTOA 2015", Instrumentation aux Limites "BioPAN", [A12, A19, A21, App3, App5], 10 conference presentations
  - Alain Bulou. Joint projects and publications: ANR *I2T2M*, Pari Scientifique LMAc "OPACOP 2018", [A6, A9, A10, A12, A13, A21, A23, A31, App4, App5], 32 conference presentations
  - Erwan Nicol. Joint project: ANR *I2T2M*, 7 oral conference presentations
  - Nicolas Delorme. Joint project and publication: Pari Scientifique LMAc "OPTOA 2015", Instrumentation aux Limites "BioPAN", [A12, A33], 8 oral conference presentations
- LAUM, UMR 6613 CNRS, Le Mans Université
  - Vitali Goussev (V. E. Gusev), Nikolay Chigarev, Vincent Tournat. Joint projects and publications: ANR *I2T2M*, ANR *UpDown*, ANR *LUDACism*, Pari Scientifique "OPACOP 2018" and "OPTOA 2015", CIFRE ANRT Scholarship, PAPD 2017, Instrumentation aux Limites "BioPAN", post-doc Acoustic Hub®, post-doc MSCA, post-docs IA-GS, [A6, A8-A19, A21-A34, App3-App6], 111 conference presentations
  - Jean-Philippe Groby, Aroune Duclos, Alan Geslain. Joint publications: [A7, A22], 2 oral conference presentations

National Collaborations

- Andreas Zerr (LSPM, UPR 3407 CNRS, Université Paris 13). Joint projects and publications: ANR *LUDACism*, ANR *I2T2M*, Pari Scientifique "OPACOP 2018", [A6, A9, A10, A13, A23, A30, A31, App4], 36 conference presentations
- Mathieu Ducousso (SAFRAN Group, Magny-les-Hameaux). Joint projects and publications: CIFRE ANRT Scholarship, ANR *I2T2M*, [A16, A25, A26], 16 oral conference presentations
- Thomas Dehoux, Maroun Abi Ghanem (ILM, UMR 5306 CNRS, Université Lyon 1). Joint projects and publications: ANR *biophoNonics*, [App2, A7, A20, A35, A36], 6 oral conference presentations in this context
- Jérôme Wolfman, Béatrice Negulescu (Laboratoire GREMAN, UMR CNRS 7347, University of Tours, INSA CVL). Joint project and publication: ***submission of an ANR project on very high-frequency surface acoustic waves (with cleaved super-lattices)*** (with C2N) to the 2022 and 2023 call for projects (not accepted), samples for postdoctoral research by S. Sandeep and R. Delalande, [A27], 5 oral conference presentations

- Sylvain Mézil, Claire Prada (Langevin Institute, ESPCI ParisTech, CNRS, PSL University Paris, Sorbonne University). Project: PhD thesis CDE by J. Alcaraz, 5 oral conference presentations in this context; joint publications before my recruitment at Le Mans University [App1, A4, A5, A7], 4 oral conference presentations
- Daniel Lanzillotti Kimura, Aristide Lemaître, Martina Morassi (C2N, UMR 9001 CNRS, University Paris-Saclay). Joint projects: ***submission of an ANR project on very high-frequency surface acoustic waves (with cleaved super-lattices)*** (with GREMAN) to the 2022 and 2023 call for projects (not accepted), samples for the postdoctoral research (MSCA-STSAW) of C. Li, 3 oral conference presentations

International Collaborations

- Prof. Osamu Matsuda, Faculty of Engineering, Hokkaido University (Japan), **invited since 2014** as part of the **Acoustic Hub® (Pays de la Loire Region project) and then IA-GS** (except in 2020-2021 due to COVID, visit rescheduled to December 2022) and co-supervisor of the PhD of Artem Husiev. No articles where I am a co-author yet, but several articles where my LAUM colleagues are co-authors. 2 oral conference presentations.
- Dr. David H. Hurley, Director, Center for Thermal Energy Transport under Irradiation Materials Science and Engineering Department, Idaho National Laboratory (USA), invited as part of the **Acoustic Hub® (Pays de la Loire Region project) in 2017 and 2018**. Joint publications: [A14, A17, A24, A32, App6], 9 oral conference presentations.
- Prof. Andrey Akimov, Department of Physics and Astronomy, University of Nottingham (UK), invited as part of the **Acoustic Hub® (Pays de la Loire Region project) in 2019**. Joint publication: [A7], 2 oral conference presentations, co-organization of 2 sessions at 2 international conferences (Metanano 2019 and FA 2020).
- Asst. Prof. Xiaodong Xu, Department of Science & Engineering, Nanjing University (PR China), whom I invited as part of the **incoming international mobility program** of Le Mans University **from 13/01/2020 to 14/02/2020**, from 04/07/2024 to 24/07/2024 (canceled due to visa processing delays), and from 30/06/2025 to 19/07/2025. The travel expenses (travel, accommodation, meals) for the invited researcher were covered by this program.
- Prof. Mikhail R. Baklanov, European Centre for Knowledge and Technology Transfer (EUROTEX) (Belgium), provided us with samples **in 2022** of materials with low dielectric constant for characterization and use as inhomogeneous samples in the context of Brillouin interferometry (following the PhD of A. Husiev). Joint publication: [A29], 2 oral conference presentations.
- Dr. Rainer Hillenbrand, CIC nanoGUNE (San Sebastián, Basque Country, Spain), with whom the collaboration started in **2022**, and has been intensifying in 2023-2024 as part of my CRCT and my CNRS delegation.
- Asst. Prof. Chenyin Ni, a former post-doctoral fellow of the group before I joined it, is now with the Department of Information Physics and Engineering, Nanjing University of Science and Technology (PR China). He visited our group in December 2023 for a week and subsequently applied for a fellowship in China, with support from both myself and my colleague Pr. Vitali Goussev, to invite the two of us as visiting researchers. The aim is to work on nonlinear laser ultrasonic crack characterization under horizontal shear loading. **I spent three weeks, in October 2024, in his laboratory**, to advance this project and, notably, to advise and supervise a master student, Minjie Gao, working on the experimental setup.
- Prof. Christ Glorieux, Faculty of Science, Department of Physics and Astronomy, Soft Matter and Biophysics, KU Leuven (Belgium), with whom a collaboration started in **2024** in the context of a second-year master student in the WPA master program, Ruosong Li, who was conducting his research project in our

group at LAUM and seeking an internship abroad. Ruosong is now pursuing his PhD at KU Leuven, for which I am the co-supervisor alongside Prof. Christ Glorieux. His PhD, which started in Sept. 2025, is entitled "Mapping of shear modulus in soft and biological matter by laser ultrasonics".

- Prof. Oliver B. Wright, a long-time collaborator of Pr. Vitali Goussev, is an Emeritus Professor at Hokkaido University and a Guest Professor at Osaka University (Japan). I invited him with support from a **visiting researcher fellowship** from the Institut d'Acoustique–Graduate School **from 21/04/2025 to 10/05/2025**. During his stay, we laid the foundations for our shared research interests and began this new collaboration. The travel expenses (travel, accommodation, meals) for the invited researcher were covered by this fellowship. He has expressed interest in visiting our team annually from now on.
- Res. Fellow Salvatorre La Cavera III, Royal Academy of Engineering Research Fellow, Nottingham Research Fellow, Optics and Photonics Group, University of Nottingham (UK), was invited with support from a **visiting researcher fellowship** from the Institut d'Acoustique–Graduate School **from 07/06/2025 to 01/07/2025**. During his stay, we will initiate collaboration on developing next-generation 3D acoustic metamaterials and establish the basis for another joint research project. The travel expenses (travel, accommodation, meals) for the invited researcher are covered by this fellowship. He has already expressed interest in visiting our team annually for one month or more following this initial stay.

For information, the Acoustic Hub® program (AAP Connect Talent, Pays de la Loire Region), led by Vincent Tournat (CNRS Research Director at LAUM), aimed to give recognized international researchers the opportunity to collaborate and develop research projects in the field of acoustics at Le Mans, by funding repeated research visits (from 1 to 3 months) over the years. For the most promising and strategic projects, additional funding (PhD or postdoctoral scholarships) could be obtained to strengthen the collaboration, which was the case for our research theme (with Osamu Matsuda). This program was extended as part of the Institut d'Acoustique–Graduate School (IA–GS).

2.3.6 Supervision of young researchers

Supervision of postdoctoral researchers

	LAST NAME	First Name	Title [project, communications]	Start-End	Super-vision	Co-supervisors
1	KURIAKOSE	Maju	Picosecond laser ultrasound for imaging compressed polycrystalline materials [ANR LUDACism, A6, A9, A10, A13]	15/01/2015 - 15/01/2016	30%	V. Goussev 30% N. Chigarev 40%
2	KURIAKOSE	Maju	Laser excitation of surface acoustic waves in ferroelectrics [OPTOA2015, A12]	10/01/2016 - 10/01/2017	20%	P. Ruello 20% V. Goussev 20% N. Chigarev 40%
3	DE LIMA SAVI	Elton	Opto-acousto-optical quantitative imaging of material elasticity and grain boundaries [Acoustic Hub, A12, A15, A23, A24]	26/02/2018 - 25/02/2019	40%	D. Hurley 30% V. Goussev 30%
4	LI	Haiyang	Sensitive non-destructive testing of cracked and fatigued materials by linear and nonlinear resonance of zero group velocity Lamb modes [PAPD, IC49, IC57, IC109]	01/03/2018 - 28/02/2019	70%	V. Goussev 30%
5	SANDEEP	Sathyan	In situ 3D opto-acousto-optical imaging of materials transformations at nanoscale [ANR I2T2M + IA-GS, A23, A27, A29, A31, A35, A36]	01/10/2019 - 24/09/2023	30%	V. Goussev 20% N. Chigarev 30% E. Nicol 20%
6	LI	Changxiu	Opto-acoustic and acousto-optic transducers for above 100 GHz surface acoustic waves [IA-GS, A33]	04/11/2019 - 03/05/2021	35%	V. Goussev 30% N. Chigarev 35%
7	LE RIDANT	Louise	Modélisation de la propagation d'ondes élastiques guidées dans des matériaux phononiques bio-sourcés anisotropes et problèmes inverses [ANR biophoNonics, FC17, IC85]	06/09/2021 - 05/09/2023	100%	
8	DELALANDE	Ronan	All-optical generation and detection of sub-THz surface acoustic waves [IA-GS, IC86, IC102, IC111]	01/01/2022 - 31/12/2022	35%	V. Goussev 30% N. Chigarev 35%
9	LI	Changxiu	Sub-THz surface acoustic waves [MSCA-STSAW, A33]	01/02/2022 - 31/01/2024	30%	V. Goussev 40% N. Chigarev 30%

Supervision of PhD Students

The supervision rates below are the official rates imposed by the doctoral school of Engineering Sciences and Systems (SIS) No. 602, which I am part of. It sets a minimum of 40% for the PhD supervisor's rate and 30% for the other two supervisors when there are three. Apart from Nikolay Chigarev, a research engineer at Le Mans University, and Sylvain Mézil, a research fellow at CNRS (Langevin Institute, Paris), the other co-supervisors are University Professors (V. Goussev, R. Fablet) or CNRS Research Directors (V. Tournat), as I do not yet have the habilitation to supervise research.

In practice, I have been at the forefront of the daily supervision of Guqi Yan and Romain Hodé, whom I trained in experimental laser ultrasonics methods, guided wave theory (particularly for zero group velocity Lamb modes), and for whom I was the primary reviewer of articles, the thesis manuscript, and the first to review, correct, and rehearse presentation slides and posters for conferences.

My involvement in Théo Thréard's PhD was similar, except for the initial article reviews and thesis manuscript, which were handled by V. Goussev (I was the second reviewer), and the training in picosecond

[2]Contrat doctoral d'établissement

	LAST NAME	First Name	Title [contract/project, communications]	Start-End	Super-vision	Co-supervisors
1	YAN	Guqi	Zero-group-velocity Lamb modes in laser ultrasonics: fatigue monitoring and material characterization [CDE[2], A11, A18, A22]	01/10/2015 - 20/11/2018	30%	V. Tournat 40% V. Goussev 30%
2	HODÉ	Romain	Development of laser ultrasonic methods for the nondestructive evaluation of bonded aeronautical assemblies [CIFRE Safran, A16, A25, A26]	01/10/2017 - 24/11/2020	30%	V. Tournat 40% V. Goussev 30% M. Ducousso (SAFRAN)
3	THRÉARD	Théo	Development of opto-acousto-optical methods for three-dimensional material imaging with nano-acoustic longitudinal and transversal waves [OPACOP2018, A23, A24, A27, A31, A32, A33, App6]	01/10/2018 - 06/12/2021	30%	V. Goussev 40% N. Chigarev 30%
4	HUSIEV	Artem	Application of ultrafast optical interferometry for opto-acousto-optical depth-profiling of materials [Acoustic Hub, A29, IC58, IC66-67, IC69, IC74]	01/11/2017 - 14/12/2022 Extension COVID	30%	V. Goussev 40% N. Chigarev 30% O. Matsuda (Japon)
5	ALCARAZ	Juliette	Elastic guided waves near and far a free edge monitored with laser ultrasonics: dispersion and resonances [CDE, A34, FC16, FC18, FC21, FC22, IC92, IC109]	01/10/2021 - 23/04/2025 4-month maternity leave	30 %	V. Goussev 40% S. Mézil 30% (Institut Langevin)
6	PAJUSCO	Nicolas	4D quantitative opto-acousto-optical imaging of transient material transformations [CDE, A31, FC19-20, FC24, IC83, IC87-88, IC93-96, IC99, IC101, IC103-105, IC107-108, IC110, IC112-113]	19/09/2022 -	30%	V. Goussev 40% R. Fablet 30% (Lab-STICC)

acoustic experimental methods provided by N. Chigarev and later by S. Sandeep (postdoctoral researcher). For Théo, I was in charge of signal processing, which was central to the imaging method used in his thesis.

For Artem Husiev's thesis, N. Chigarev and O. Matsuda provided training in picosecond acoustic experimental methods. O. Matsuda and I oversaw the reflection on the experimental setup at the heart of Artem's thesis, and I was responsible for managing the equipment purchases. As with Guqi and Romain, I was the primary reviewer of the article (currently being finalized), the thesis manuscript, and the first to review, correct, and rehearse presentation slides and posters for conferences.

For Juliette Alcaraz's thesis, I provided her with training in experimental laser ultrasonics methods and the theory of guided elastic waves in plates or on plate edges. Sylvain Mézil follows and participates in the supervision through weekly progress meetings and discussions on a dedicated collaborative communication platform (Slack) for Juliette's thesis. Both of us ensured the first review and rehearsal of Juliette's slides for the French Acoustics Congress and the International Congress on Ultrasonics, as well as her poster for the Sound and Light Summer School. Vitali Goussev supervises this thesis work by attending monthly progress meetings.

Finally, for Nicolas Pajusco's thesis, my involvement is similar to that of Guqi Yan and Romain Hodé's theses. In this thesis supervision, Ronan Fablet (PR, Lab-STICC, Brest) will contribute his expertise in physics-informed neural networks when the groundwork is ready. With Vitali Goussev, we provide training in laser generation theory and laser detection via Brillouin scattering of acoustic waves in transparent inhomogeneous elastic media, which is essential for the success of this thesis. The experimental training was provided by S. Sandeep during the first year of the thesis.

Supervision of internships for second-year Master's Research students

	LAST NAME	First Name	Title [communications]	Start-End	Super-vision	Co-supervisors
1	HUSIEV	Artem	Optoacoustic nanoscopy [FC9]	01/03/2017 - 30/09/2017	60%	N. Delorme 5% N. Chigarev 25% V. Goussev 10%
2	HODÉ	Romain	Characterization of aeronautical bonding by synthesis of laser ultrasound wavefronts	01/04/2017 - 30/09/2017	90%	M. Ducousso 5% V. Tournat 5%
3	MÉTEYER	Erwan	Laser ultrasonics in micro-structures made by 3D printing [FC9, IC35, IC38]	01/10/2017 - 15/07/2018	70%	V. Tournat 30%
4	VOROBIOV	Anton	Optoacoustic nanoscopy	01/03/2019 - 26/07/2019	30%	A. Husiev 60% N. Chigarev 10%
5	DOVERI	Élise	Focused laser ultrasound in materials for bonding studies and acoustic imaging	01/10/2019 - 24/07/2020	100%	
6	ALCARAZ	Juliette	Sensitive non-destructive testing of cracked materials by linear and nonlinear resonances in plates: zero-group-velocity Lamb modes and edge resonances [IC57]	08/09/2020 - 23/07/2021	100%	
7	PAJUSCO	Nicolas	Guided elastic waves in a multi-layer anisotropic system with finite and semi-infinite cross-section: analytical and numerical approaches [IC78]	06/09/2021 - 15/07/2022	100%	
8	GOUTIER	Lou-Anne	Experimental demonstration of collinear interaction in time-domain Brillouin scattering	06/09/2022 - 15/07/2023	70%	N. Chigarev 15% V. Goussev 15%
9	LI	Ruosong	Time-domain Brillouin scattering and the application in time-domain Brillouin scattering imaging of ultrafast optical interferometry	06/09/2023 - 01/02/2024	80%	S. Sathyan 20%
10	JIN	Xiuyu	Characterization by picosecond acoustics and time-domain Brillouin scattering	03/02/2025 - 04/07/2025	80%	N. Chigarev 20%

3 Scientific Production

My name is in bold, the names of our master's students, PhD students, and post-doctoral fellows are underlined. The name of the presenter of conference presentations is marked with an asterisk (*). The large number of authors for some articles and conference presentations is due to the collaborations between laboratories and the desire to include study and research engineers as authors instead of just acknowledging them in the acknowledgments section. The years are highlighted in green, notable facts are highlighted in blue. The 7 articles in special issues all followed a standard peer review process and are identified by a gray highlight for the article number. The quartile (Scopus) of each journal at the time of publication is highlighted in orange.

3.1 Articles in peer-reviewed international journals

[A36] N. A. Alderete, S. Sathyan, **S. Raetz**, M. Asgari, M. A. Ghanem, H. D. Espinosa, *Does the mantis shrimp pack a phononic shield?*, **Science 387(6734)**, 659–666 (2025). [Q1] [https://doi.org/10.1126/science.adq7100]; **related perspective:** P. D. Zavattieri, *Naturally twisted to sieve stress*, **Science 387(6734)**,578–579 (2025). [https://doi.org/10.1126/science.adv3100]; **related podcast:**

S. Crespi, P. Voosen, *How the mantis shrimp builds its powerful club, and mysteries of middle Earth*, (6 February 2025).

[A35] N. A. Alderete, S. Sathyan, **S. Raetz**, J. Margueritat, M. Asgari, N. Boechler, M. A. Ghanem, H. D. Espinosa, *Characterization of the phononic landscape of natural nacre from abalone shells*, **Small**, 2407959 (2024). [Q1] [https://doi.org/10.1002/smll.202407959]

[A34] N. Chigarev, K. Strzalkowski, V. Gusev, P. Sedzicki, J. Alcaraz, **S. Raetz**, J. Zakrzewski, *Evaluation of the sound velocities of cadmium zinc telluride crystals by time-domain Brillouin scattering technique*, **Applied Physics A 130(10)**, 732 (2024). [Q2] [https://doi.org/10.1007/s00339-024-07898-6]

[A33] C. Li, N. Chigarev, T. Thréard, K. Zhang, N. Delorme, V. Tournat, **S. Raetz**, H. Lu, V. E. Gusev, *Optically Controlled Nano-Transducers Based on Cleaved Superlattices for Monitoring Gigahertz Surface Acoustic Vibrations*, **ACS Nano 18(13)**, 9331-9343 (2024). [Q1] [https://doi.org/10.1021/acsnano.3c07576]

[A32] V. E. Gusev, T. Thréard, D. H. Hurley, **S. Raetz**, *Time-domain Brillouin scattering theory for probe light and acoustic beams propagating at an angle and acousto-optic interaction at material interfaces*, **Photoacoustics 33**, 100563 (2023). [Q1] [https://doi.org/10.1016/j.pacs.2023.100563]

[A31] S. Sandeep, **S. Raetz**, N. Chigarev, N. Pajusco, T. Thréard, M. Edely, A. Bulou, A. Zerr, V. E. Gusev, *Time-domain Brillouin scattering for evaluation of materials interface inclination: Application to photoacoustic imaging of crystal destruction upon non-hydrostatic compression*, **Photoacoustics 33**, 100547 (2023). [Q1] [https://doi.org/10.1016/j.pacs.2023.100563]

[A30] C.-H. Li, P. Djemia, N. Chigarev, S. Sodki, Y. Roussigné, G. Manthilake, F. Tessier, **S. Raetz**, V. E. Gusev, A. Zerr, *Elastic moduli and refractive index of γ-Ge_3N_4*, **Phil. Trans. R. Soc. A 381(2258)**, 20230016 (2023). [Q1] [https://doi.org/10.1098/rsta.2023.0016]

[A29] S. Sandeep, A. S. Vishnevskiy, **S. Raetz**, S. Naumov, D. S. Seregin, A. Husiev, K. A. Vorotilov, V. E. Gusev, M. R. Baklanov, *In-Situ Imaging of a Light-Induced Modification Process in Organo-Silica Films via Time-Domain Brillouin Scattering*, **Nanomaterials 12(9)**, 1600 (2022). [Q1] [https://doi.org/10.3390/nano12091600]

[A28] P. Mora, M. Chekroun, **S. Raetz**, V. Tournat, *Nonlinear generation of a zero group velocity mode in an elastic plate by non-collinear mixing*, **Ultrasonics 119**, 106589 (2022). [Q1] [https://doi.org/10.1016/j.ultras.2021.106589]

[A27] S. Sandeep, **S. Raetz**, J. Wolfman, B. Negulescu, G. Liu, J.-L. Longuet, T. Thréard, V. E. Gusev, *Evaluation of Optical and Acoustical Properties of $Ba_{1-x}Sr_xTiO_3$ Thin Film Material Library via Conjugation of Picosecond Laser Ultrasonics with X-ray Diffraction, Energy Dispersive Spectroscopy, Electron Probe Micro Analysis, Scanning Electron and Atomic Force Microscopies*, **Nanomaterials 11(11)**, 3131 (2021). [Q1] [https://doi.org/10.3390/nano11113131]

[A26] R. Hodé, **S. Raetz**, N. Chigarev, J. Blondeau, N. Cuvillier, V. Gusev, M. Ducousso, V. Tournat, *Laser ultrasonics in a multilayer structure: Plane wave synthesis and inverse problem for nondestructive evaluation of adhesive bondings*, **J. Acoust. Soc. Am. 150(3)**, 2076-2087 (2021). [Q2] [https://doi.org/10.1121/10.0005975]

[A25] R. Hodé, M. Ducousso, N. Cuvillier, V. Gusev, V. Tournat, **S. Raetz**, *Laser ultrasonics in a multilayer structure: Semi-analytic model and simulated examples*, **J. Acoust. Soc. Am. 150(3)**, 2065-2075 (2021). [Q2] [https://doi.org/10.1121/10.0005974]

[A24] T. Thréard, E. de Lima Savi, S. Avanesyan, N. Chigarev, Z. Hua, V. Tournat, V. E. Gusev, D. H. Hurley, **S. Raetz**, *Photoacoustic 3-D imaging of polycrystalline microstructure improved with transverse acoustic waves*, **Photoacoustics 23**, 100286 (2021). [Q1] [https://doi.org/10.1016/j.pacs.2021.100286]

[A23] S. Sandeep, T. Thréard, E. de Lima Savi, N. Chigarev, A. Bulou, V. Tournat, A. Zerr, V. E. Gusev, **S. Raetz**, *3D characterization of individual grains of coexisting high-pressure H_2O ice phases by time-domain Brillouin scattering*, **J. Appl. Phys. 130**, 053104 (2021). [Q2] [https://doi.org/10.1063/5.0056814] (**featured by the editor**); A. Bandari, *3D-imaging of polycrystal texture, boundaries using time-domain Brillouin scattering*, **AIP Scilight** (04 August 2021). [https://doi.org/10.1063/10.0005895]

[A22] G. Yan, **S. Raetz**, J.-P. Groby, A. Duclos, A. Geslain, N. Chigarev, V. E. Gusev, V. Tournat, *Estimation via Laser Ultrasonics of the Ultrasonic Attenuation in a Polycrystalline Aluminum Thin Plate Using Complex Wavenumber Recovery in the Vicinity of a Zero-Group-Velocity Lamb Mode*, **Appl. Sci. 11(15)**, 6924 (2021). [Q2] [https://doi.org/10.3390/app11156924]

[A21] R. Gu, T. Perrault, V. Juvé, G. Vaudel, M. Weis, A. Bulou, N. Chigarev, A. Levchuk, **S. Raetz**, V. E. Gusev, Z. Cheng, H. Bhaskaran, P. Ruello, *Nonthermal Transport of Energy Driven by Photoexcited Carriers in Switchable Solid States of GeTe*, **Phys. Rev. Appl. 16**, 014055 (2021). [Q1] [https://doi.org/10.1103/PhysRevApplied.16.014055]

[A20] M. Abi Ghanem, L. Khoryati, R. Behrou, A. Khanolkar, **S. Raetz**, F. Allein, N. Boechler, T. Dehoux, *Growing phenotype-controlled phononic materials from plant cells scaffolds*, **Appl. Mater. Today 22**, 100934 (2021). [Q1] [https://doi.org/10.1016/j.apmt.2020.100934]

[A19] V. Juvé, R. Gu, S. Gable, T. Maroutian, G. Vaudel, S. Matzen, N. Chigarev, **S. Raetz**, V. E. Gusev, M. Viret, A. Jarnac, C. Laulhé, A. A. Maznev, B. Dkhil, and P. Ruello, *Ultrafast light-induced shear strain probed by time-resolved x-ray diffraction: Multiferroic $BiFeO_3$ as a case study*, **Phys. Rev. B 102(22)**, 220303(R) (2020). [Q1] [https://doi.org/10.1103/PhysRevB.102.220303]

[A18] G. Yan, **S. Raetz**, N. Chigarev, J. Blondeau, V. E. Gusev, and V. Tournat, *Cumulative fatigue damage in thin aluminum films evaluated non-destructively with lasers via zero-group-velocity Lamb modes*, **NDT & E Int. 116**, 102323 (2020). [Q1] [https://doi.org/10.1016/j.ndteint.2020.102323]

[A17] Y. Wang, D. H. Hurley, Z. Hua, T. Pezeril, **S. Raetz**, V. E. Gusev, V. Tournat, and M. Khafizov, *Imaging grain microstructure in a model ceramic energy material with optically generated coherent acoustic phonons*, **Nat. Commun. 11**, 1597 (2020). [Q1] [https://doi.org/10.1038/s41467-020-15360-3]

[A16] R. Hodé, **S. Raetz**, J. Blondeau, N. Chigarev, N. Cuvillier, V. Tournat, and M. Ducousso, *Nondestructive evaluation of structural adhesive bonding using the attenuation of zero-group-velocity Lamb modes*, **Appl. Phys. Lett. 116**, 104101 (2020). [Q1] [https://doi.org/10.1063/1.5143215]

[A15] J. D. G. Greener, E. de Lima Savi, A. V. Akimov, **S. Raetz**, Z. Kudrynskyi, Z. D. Kovalyuk, N. Chigarev, A. Kent, A. Patané, and V. Gusev, *High-Frequency Elastic Coupling at the Interface of van der Waals Nanolayers Imaged by Picosecond Ultrasonics*, **ACS Nano 13(10)**, 11530-11537 (2019). [Q1] [https://doi.org/10.1021/acsnano.9b05052]

[A14] Y. Wang, D.H. Hurley, Z. Hua, G. Sha, **S. Raetz**, V.E. Gusev, and M. Khafizov, *Nondestructive characterization of polycrystalline 3D microstructure with time-domain Brillouin scattering*, **Scripta Mater. 166**, 34–38 (2019). [Q1] [https://doi.org/10.1016/j.scriptamat.2019.02.037]

[A13] **S. Raetz**, M. Kuriakose, P. Djemia, S. M. Nikitin, N. Chigarev, V. Tournat, A. Bulou, A. Lomonosov, V. E. Gusev, and A. Zerr, *Elastic anisotropy and single-crystal moduli of solid argon up to 64 GPa from time-domain Brillouin scattering*, **Phys. Rev. B 99**, 224102 (2019). [Q1] [https://doi.org/10.1103/PhysRevB.99.224102]

[A12] **S. Raetz**, A. Lomonosov, S. Avanesyan, N. Chigarev, E. de Lima Savi, A. Bulou, N. Delorme, Z. Wen, Q. Jin, M. Kuriakose, A. Rousseau, G. Vaudel, P. Ruello, D. Wu, and V. Gusev, *Evaluation of the Structural Phase Transition in Multiferroic ($Bi_{1-x}Pr_x$)(Fe0.95Mn0.05)O3 Thin Films by A Multi-Technique Approach Including Picosecond Laser Ultrasonics*, **Appl. Sci. 9(4)**, 736 (2019). [Q2] [https://doi.org/10.3390/app9040736]

[A11] G. Yan, **S. Raetz**, N. Chigarev, V. E. Gusev, and V. Tournat, *Characterization of progressive fatigue damage in solid plates by laser ultrasonic monitoring of zero-group-velocity lamb modes*, **Phys. Rev. Applied 9**, 061001 (2018). [Q1] [https://doi.org/10.1103/PhysRevApplied.9.061001]

[A10] M. Kuriakose, **S. Raetz**, Q. M. Hu, S. M. Nikitin, N. Chigarev, V. Tournat, A. Bulou, A. Lomonosov, P. Djemia, V. E. Gusev, and A. Zerr, *Longitudinal sound velocities, elastic anisotropy, and phase transition of high-pressure cubic H2O ice to 82 GPa*, **Phys. Rev. B 96**, 134122 (2017). [Q1] [https://doi.org/10.1103/PhysRevB.96.134122]

[A9] M. Kuriakose, N. Chigarev, **S. Raetz**, A. Bulou, V. Tournat, A. Zerr, and V. E. Gusev, *In situ imaging of the dynamics of photo-induced structural phase transition at high pressures by picosecond acoustic interferometry*, **New J. Phys. 19**(5), 053026 (2017). [Q1] [https://doi.org/10.1088/1367-2630/aa6b3d]

[A8] F. Faëse, **S. Raetz**, N. Chigarev, C. Mechri, J. Blondeau, B. Campagne, V. E. Gusev, and V. Tournat, *Beam shaping to enhance zero group velocity lamb mode generation in a composite plate and non-destructive testing application*, **NDT & E Int. 85**, 13–19 (2017). [Q1] [https://doi.org/10.1016/j.ndteint.2016.09.003]

[A7] A. Geslain, **S. Raetz**, M. Hiraiwa, M. Abi Ghanem, S. P. Wallen, A. Khanolkar, N. Boechler, J. Laurent, C. Prada, A. Duclos, P. Leclaire, and J.-P. Groby, *Spatial laplace transform for complex wavenumber recovery and its application to the analysis of attenuation in acoustic systems*, **J. Appl. Phys. 120**(13), 135107 (2016). [Q1] [https://doi.org/10.1063/1.4963827]

[A6] M. Kuriakose, **S. Raetz**, N. Chigarev, S. M. Nikitin, A. Bulou, D. Gasteau, V. Tournat, B. Castagnede, A. Zerr, and V. E. Gusev, *Picosecond laser ultrasonics for imaging of transparent polycrystalline materials compressed to megabar pressures*, **Ultrasonics 69**, 259–267 (2016). [Q1] [https://doi.org/10.1016/j.ultras.2016.03.007]

[A5] S. Mezil, F. Bruno, **S. Raetz**, J. Laurent, D. Royer, and C. Prada, *Investigation of interfacial stiffnesses of a tri-layer using zero-group velocity Lamb modes*, **J. Acoust. Soc. Am. 138**(5), 3202–3209 (2015). [Q1] [https://doi.org/10.1121/1.4934958]

[A4] **S. Raetz**, J. Laurent, T. Dehoux, D. Royer, B. Audoin, and C. Prada, *Effect of refracted light distribution on the photoelastic generation of zero-group velocity Lamb modes in optically low-absorbing plates*, **J. Acoust. Soc. Am. 138**(6), 3522–3530 (2015). [Q1] [https://doi.org/10.1121/1.4936903]

[A3] **S. Raetz**, T. Dehoux, M. Perton, and B. Audoin, *Acoustic beam steering by light refraction: Illustration with directivity patterns of a tilted volume photoacoustic source*, **J. Acoust. Soc. Am. 134**(6), 4381–4392 (2013). [Q1] [https://doi.org/10.1121/1.4828825]

[A2] **S. Raetz**, T. Dehoux, and B. Audoin, *Effect of laser beam incidence angle on the thermoelastic generation in semi-transparent materials*, **J. Acoust. Soc. Am. 130**(6), 3691–3697 (2011). [Q1] [https://doi.org/10.1121/1.3658384]

[A1] **S. Raetz**, T. Dehoux, and B. Audoin, *Oblique laser incidence to select laser-generated acoustic modes*, **J. Phys.: Conf. Ser. 278**(1), 012030 (2011). [Q4] [https://doi.org/10.1088/1742-6596/278/1/012030]

3.2 Articles published on an open-access preprint archive

[App6] V. E. Gusev, T. Thréard, D. H. Hurley, and **S. Raetz**. (2021) *Theory of time-domain Brillouin scattering for probe light and acoustic beams propagating at an arbitrary relative angle: Application to acousto-optic interaction near material interfaces.* **arXiv cond-mat.mtrl-sci**, 2107.05294. [https://arxiv.org/abs/2107.05294] Cette prépublication est parue dans Photoacoustics : https://doi.org/10.1016/j.pacs.2023.100563 [A33].

[App5] R. Gu, T. Perrault, V. Juvé, G. Vaudel, M. Weis, A. Bulou, N. Chigarev, A. Levchuk, **S. Raetz**, V. E. Gusev, Z. Cheng, H. Bhaskaran, and P. Ruello. (2020) *Non-thermal transport of energy driven by photoexcited carriers in switchable solid states of GeTe.* **arXiv cond-mat.mtrl-sci**, 2009.12302. [https://arxiv.org/abs/2009.12302] Cette prépublication est parue dans Phys. Rev. Applied : https://doi.org/10.1103/PhysRevApplied.16.014055 [A21].

[App4] S. Sandeep, T. Thréard, E. De Lima Savi, N. Chigarev, A. Bulou, V. Tournat, A. Zerr, V. E. Gusev, and **S. Raetz**. (2020) *3D characterisation of individual grains of coexisting high-pressure H2O ice phases by time-domain Brillouin scattering.* **arXiv cond-mat.mtrl-sci**, 2008.00034. [https://arxiv.org/abs/2008.00034] Cette prépublication est parue dans J. Appl. Phys. : https://doi.org/10.1063/5.0056814 [A23].

[App3] V. Juvé, R. Gu, S. Gable, T. Maroutian, G. Vaudel, S. Matzen, N. Chigarev, **S. Raetz**, V. E. Gusev, M. Viret, A. Jarnac, C. Laulhé, A. Maznev, B. Dkhil, and P. Ruello. (2020) *Ultrafast light-induced shear strain probed by time-resolved X-ray diffraction: the model multiferroic $BiFeO_3$ as a case study.* **arXiv cond-mat.mtrl-sci**, 2007.10967. [https://arxiv.org/abs/2007.10967] Cette prépublication est parue dans Phys. Rev. B : https://doi.org/10.1103/PhysRevB.102.220303 [A19].

[App2] M. Abi Ghanem, L. Khoryati, R. Behrou, A. Khanolkar, **S. Raetz**, F. Allein, N. Boechler, and T. Dehoux. (2020) *Growing Phenotype-controlled Phononic Materials from Plant Cells Scaffolds.* **arXiv physics.app-ph**, 2001.10971. [https://arxiv.org/abs/2001.10971] Cette prépublication est maintenant parue dans Appl. Mat. Today : https://doi.org/10.1016/j.apmt.2020.100934. [A20].

[App1] S. Mezil, F. Bruno, **S. Raetz**, J. Laurent, D. Royer, and C. Prada. (2015) *Investigation of interfacial stiffnesses of a tri-layer using Zero-Group Velocity Lamb modes.* **arXiv cond-mat.mtrl-sci**, 1511.04367. [https://arxiv.org/abs/1511.04367] Cette prépublication est parue dans J. Acoust. Soc. Am. : https://doi.org/10.1121/1.4934958 [A5].

3.3 Communications at International Conferences

In the list of communications at international conferences presented below, I would like to clarify that all the conferences I participate in are selective conferences, some of which are highly selective, with the possibility to submit proceedings in almost all of them (those listed previously all offer this option). With the exception of communication [IC1], which was accompanied by an article published in a special edition dedicated to the LU2010 conference of the Journal of Physics (IOP), I have never submitted other conference proceedings for the main reason that some journals consider these articles as a prior publication of results, which could diminish the originality of the manuscript submitted, where they are typically preliminary or less developed results.

[IC116] J. Alcaraz, S. Mezil, N. Chigarev, V. E. Gusev, **S. Raetz***, *Influence of pulsed laser parameters on the generation of zero-group-velocitiy Lamb modes in silicon*, **ICU 2025**, September 2025, Paderborn, Germany. (Oral)

[IC115] V. Gusev*, S. Sandeep, N. Pajusco, E. Nicol, M. Edely, N. Delorme, N. Chigarev, V. Tournat, N. Cuvillier, J. Delozanne, M. Ducousso, **S. Raetz**, *All optical generation and detection of picosecond shear acoustic pulses mediated by surface roughness of elastically isotropic solids*, **ICU 2025**, September 2025, Paderborn, Germany. (Oral)

[IC114] N. Alderete, S. Sandeep, **S. Raetz**, M. Abi Ghanem*, H. Espinosa, *Probing the phononic behavior of the Mantis shrimp's dactyl club with optoacoustics*, **ICU 2025**, September 2025, Paderborn, Germany. (Oral)

[IC113] **S. Raetz***, N. Pajusco, S. Sandeep, N. Chigarev, V. Gusev, *Advances in time-domain Brillouin scattering for imaging*, **FisMat 2025**, July 2025, Venice, Italy. (Oral, **invited**)

[IC112] N. Pajusco*, **S. Raetz**, N. Chigarev, S. Sandeep, M. Edely, A. Bulou, A. Zerr, V. Gusev, *4D time-domain Brillouin scattering of water ice phase transition under non-hydrostatic load*, **AFPAC 2025**, January 2025, Chédigny, France. (Oral)

[IC111] R. Delalande, S.M. Kukhtaruk, J. Wolfman, N. Chigarev, B. Negulescu, G. Liu, **S. Raetz***, V.E. Gusev, *Nanometric surface acoustic wave pulses generated and detected by laser*, **AFPAC 2025**, January 2025, Chédigny, France. (Oral)

[IC110] N. Pajusco, **S. Raetz***, N. Chigarev, S. Sandeep, M. Edely, A. Bulou, A. Zerr, V. Gusev, *4D time-domain Brillouin scattering imaging of the evolution of non-hydrostatically loaded water ice*, **LU 2024**, October 2024, Nanjing, China. (Oral)

[IC109] R. Hodé, G. Yan, J. Alcaraz, N. Chigarev, H. Li, J. Blondeau, N. Cuvillier, C. Prada, S. Mezil, V. Gusev, M. Ducousso, V. Tournat, **S. Raetz***, *Laser-ultrasonics-based zero-group-velocity (ZGV) Lamb modes for inspecting damaged and adhesively-bonded materials*, **LU 2024**, October 2024, Nanjing, China. (Oral, **invited**)

[IC108] V. Gusev*, T. Thréard, N. Pajusco, S. Sandeep, N. Chigarev, **S. Raetz**, *Emerging theoretical models in applications of picosecond laser ultrasonics for imaging inhomogeneous materials*, **LU 2024**, October 2024, Nanjing, China. (**Keynote**)

[IC107] N. Pajusco, **S. Raetz**, N. Chigarev, S. Sandeep, M. Edely, A. Bulou, A. Zerr*, V. E. Gusev, *3D-imaging of texturing of a polycrystalline ice VII sample upon non-hydrostatic squeezing in a DAC*, **61st EHPRG Meeting**, September 2024, Thessaloniki, Greece. (Poster)

[IC106] **S. Raetz***, *Probing and imaging complex structures from macro- to sub-microscale via laser ultrasonics*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP22)**, July 2024, Coimbra, Portugal. (Oral, **invité**, **IPPA Junior Prize**)

[IC105] S. Sandeep, N. Pajusco, E. Nicol, N. Delorme, N. Chigarev, V. Tournat, N. Cuvillier, J. Delozanne, M. Ducousso, **S. Raetz***, V. E. Gusev, *Analysis of rough metal/epoxy interfaces using time-domain Brillouin scattering*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP22)**, July 2024, Coimbra, Portugal. (Oral)

[IC104] N. Pajusco*, **S. Raetz**, N. Chigarev, S. Sandeep, M. Edely, A. Bulou, A. Zerr, V. E. Gusev, *4D imaging of water ice under high-pressure non-hydrostatic load by time-domain Brillouin scattering*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP22)**, July 2024, Coimbra, Portugal. (Oral)

[IC103] N. Pajusco*, N. Chigarev, **S. Raetz**, V. E. Gusev, *Time-domain Brillouin scattering measurement in thin layer of water with non-parallel interfaces*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP22)**, July 2024, Coimbra, Portugal. (Poster)

[IC102] R. Delalande, S. M. Kukhtaruk, J. Wolfman, N. Chigarev, B. Negulescu, G. Liu, **S. Raetz**, V. E. Gusev*, *All-optical monitoring of surface acoustic wave pulses of nanometers lengths*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP22)**, July 2024, Coimbra, Portugal. (Oral)

[IC101] V. Gusev*, N. Chigarev, S. Sandeep, T. Thréard, A. Bulou, E. Nicol, N. Pajusco, V. Tournat, N. Cuvillier, D. Hurley, M. Ducousso, A. Zerr, **S. Raetz**, *Advances in Applications of Picosecond Acoustic Interferometry for Nanoscale Imaging*, **20th World Conference on Non-Destructive Testing (WCNDT)**, May 2024, Incheon, Korea. (**Keynote**)

[IC100] C. Li*, A. Lemaitre, N. Chigarev, M. Morassi, **S. Raetz**, A. Maznev, D. Lanzillotti-Kimura, V. E. Gusev, *Optical monitoring of sub-THz Rayleigh and THz surface skimming acoustic waves on cleaved superlattices*, **Ultrafast Phenomena and Nanophotonics XXVIII (PW24O SPIE OPTO)**, January 2024, San Francisco, United States of America. (Poster)

[IC99] S. Sandeep, **S. Raetz***, N. Chigarev, N. Pajusco, T. Thréard, M. Edely, A. Bulou, A. Zerr, V. E. Gusev, *Imaging of crystal degradation upon non-hydrostatic compression via time-domain Brillouin scattering*, **AFPAC 2024**, January 2024, Loch Lomond, United Kingdom. (Oral)

[IC98] **S. Raetz***, V. E. Gusev, N. Chigarev, S. Sathyan, *Time-domain Brillouin scattering: A tool for elastic property characterization, three-dimensional imaging, and real-time monitoring of transient processes*, **Optics + Ultrasound VI (O+U VI)**, October 2023, Nottingham, United Kingdom. (**Keynote**)

[IC97] **S. Raetz***, V. E. Gusev, N. Chigarev, S. Sathyan, *Recent advances on time-domain Brillouin scattering for three-dimensional imaging and transient process monitoring*, **Workshop on Progress in Photoacoustic & Photothermal Phenomena**, September 2023, Erice, Sicily. (Oral, **invited**)

[IC96] N. Pajusco*, **S. Raetz**, V. E. Gusev, *Numerical simulation of time-domain Brillouin scattering detection based on finite element and discontinuous Galerkin methods: case of inclined interface*, **Workshop on Progress in Photoacoustic & Photothermal Phenomena**, September 2023, Erice, Sicily. (Oral)

[IC95] N. Pajusco*, **S. Raetz**, N. Chigarev, V. E. Gusev, *Qualitative comparison between experimental and numerical simulations for time-domain Brillouin scattering: the case of an inclined interface*, **Workshop on Progress in Photoacoustic & Photothermal Phenomena**, September 2023, Erice, Sicily. (Poster)

[IC94] S. Sandeep, **S. Raetz***, E. Nicol, M. Edely, N. Pajusco, N. Chigarev, N. Cuvillier, J. Delozanne, M. Ducousso, V. Tournat, V. E. Gusev, *Time-domain Brillouin scattering imaging of mechanical metal/epoxy interfaces*, **ICU 2023**, September 2023, Beijing, China. (Oral)

[IC93] S. Sandeep, N. Pajusco, **S. Raetz***, N. Chigarev, T. Thréard, M. Edely, A. Bulou, A. Zerr, V. E. Gusev, *Time-domain Brillouin scattering for evaluation of materials interface inclination*, **ICU 2023**, September 2023, Beijing, China. (Oral)

[IC92] J. Alcaraz*, **S. Raetz**, S. Mezil, C. Prada, N. Chigarev, V. E. Gusev, *Edge waves monitored by laser ultrasonics for the detection of a crack*, **ICU 2023**, September 2023, Beijing, China. (Oral)

[IC91] C. Li*, A. Lemaitre, N. Chigarev, M. Morassi, **S. Raetz**, D. Lanzillotti-Kimura, V. E. Gusev, *Rayleigh and Bulk Surface Skimming Acoustic Waves Propagation on Superlattices*, **ICU 2023**, September 2023, Beijing, China. (Oral)

[IC90] V. E. Gusev*, **S. Raetz**, N. Chigarev, S. Sathyan, *Recent Advances in Applications of Picosecond Acoustic Interferometry for Imaging of Polycrystalline Materials and Material Modifications*, **ICU 2023**, September 2023, Beijing, China. (Keynote)

[IC89] Ch. Li, Ph. Djemia, N. Chigarev, S. Sodki, Y. Roussigné, **S. Raetz**, V. E. Gusev, A. Zerr*, *Elastic moduli, anisotropy and refractive index of γ-Ge_3N_4 via laser ultrasonics, Brillouin light scattering, and first-principles calculations* **The Joint 28th AIRAPT and 60th EHPRG International Conference 2023**, July 2023, Edinburgh, UK. (Poster)

[IC88] **S. Raetz***, S. Sandeep, N. Chigarev, N. Pajusco, T. Thréard, M. Edely, A. Bulou, A. Zerr, V. E. Gusev, *Time-domain Brillouin scattering for evaluation of materials interface inclination: Theory*, **XVII International conference on phonon scattering in condensed matter (Phonons 2023)**, July 2023, Paris, France. (Poster)

[IC87] **S. Raetz***, S. Sandeep, N. Chigarev, N. Pajusco, T. Thréard, M. Edely, A. Bulou, A. Zerr, V. E. Gusev, *Time-domain Brillouin scattering for evaluation of materials interface inclination: Application to imaging of crystal degradation upon non-hydrostatic compression*, **XVII International conference on phonon scattering in condensed matter (Phonons 2023)**, July 2023, Paris, France. (Oral)

[IC86] R. Delalande*, J. Wolfman, G. Liu, B. Negulescu, N. Chigarev, **S. Raetz**, V. Gusev, *Optical monitoring of surface acoustic pulse on nanostructured perovskites*, **XVII International conference on phonon scattering in condensed matter (Phonons 2023)**, July 2023, Paris, France. (Poster)

[IC85] M. Abi Ghanem*, M. Robin, L. Le Ridant, S. Dieudonné, O. Hamant, **S. Raetz**, T. Dehoux, *Plant-based MHz-GHz phononic materials*, **XVII International conference on phonon scattering in condensed matter (Phonons 2023)**, July 2023, Paris, France. (Poster)

[IC84] C. Li*, A. Lemaitre, N. Chigarev, M. Morassi, **S. Raetz**, D. Lanzillotti-Kimura, V. E. Gusev, *Sub-THz Rayleigh and bulk surface skimming acoustic modes on superlattices*, **XVII International conference on phonon scattering in condensed matter (Phonons 2023)**, July 2023, Paris, France. (Oral)

[IC83] S. Sandeep, **S. Raetz***, E. Nicol, M. Edely, N. Pajusco, N. Chigarev, N. Cuvillier, J. Delozanne, M. Ducousso, V. Tournat, V. E. Gusev, *Imaging of mechanical properties in the vicinity of metal/epoxy interfaces by time-domain Brillouin scattering*, **AFPAC 2023**, January 2023, Fréjus, France. (Oral)

[IC82] V. E. Gusev, T. Thréard, D. Hurley, **S. Raetz***, *Time-domain Brillouin scattering for probe light and acoustic beams propagating at an arbitrary relative angle*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP21)**, June 2022, Bled, Slovenia. (Oral, **invited**)

[IC81] S. Sandeep, T. Thréard, E. De Lima Savi, N. Chigarev, A. Bulou, V. Tournat, A. Zerr, V. E. Gusev, **S. Raetz***, *3D imaging of water ice under high-pressure non-hydrostatic load by time-domain Brillouin scattering*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP21)**, June 2022, Bled, Slovenia. (Oral)

[IC80] S. Sandeep, A. S. Vishnevskiy, **S. Raetz***, S. Naumov, D. S. Seregin, K. A. Vorotilov, V. E. Gusev, M. R. Baklanov, *Real-time monitoring of light-induced curing of organosilicate glass low-k films by time-domain Brillouin scattering*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP21)**, June 2022, Bled, Slovenia. (Oral)

[IC79] C. Li*, N. Chigarev, T. Thréard, K. Zhang, N. Delorme, V. Tournat, **S. Raetz**, H. Lu, V. E. Gusev, *Laser-induced coherent GHz surface acoustic waves in cleaved superlattices*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP21)**, June 2022, Bled, Slovenia. (Oral)

[IC78] S. Sandeep*, **S. Raetz**, E. Nicol, M. Edely, N. Pajusco, N. Chigarev, N. Cuvillier, J. Delozanne, M. Ducousso, V. Tournat, V. E. Gusev, *Restriction on the laser wavelengths for imaging of metal/epoxy interfaces by time-domain Brillouin scattering*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP21)**, June 2022, Bled, Slovenia. (Oral)

[IC77] S. Sandeep*, **S. Raetz**, J. Wolfman, B. Negulescu, G. Liu, J.-L. Longuet, T. Thréard, V. E. Gusev, *Evaluation of optical and acoustical properties of $Ba_{1-x}Sr_xTiO_3$ material library by a multi-technique approach including picosecond laser ultrasonics*, **International Conference on Photoacoustic and Photothermal Phenomena (ICPPP21)**, June 2022, Bled, Slovenia. (Poster)

[IC76] M. Horvat*, K. Jaruszewska, **S. Raetz**, E. Carayol, Y. Sluyts, A. Herwerg, L. Aspöck, S. Zeman, The development of modern, interactive acoustic courseware material within the Acoustics Knowledge Alliance project, EUROREGIO / BNAM2022, May 2022, Aalborg, Denmark. (Oral)

[IC75] M. Ducousso*, R. Hodé, **S. Raetz**, V. Tournat, *Laser ultrasonics in a multilayer structure: Semi-analytic model and different examples*, **5th International Workshop on Laser-Ultrasound for Metals (LUS4Metals)**, May 2022, Gif-sur-Yvette, France. (Oral)

[IC74] S. Sathyan, A. S. Vishnevskiy, D. S. Seregin, A. Husiev, **S. Raetz**, K. A. Vorotilov, V. E. Gusev, M. R. Baklanov*, Evaluation of curing efficiency of OSG low-k films using time-domain Brillouin scattering, **47th International Conference on MICRO & NANO ENGINEERING – MNE2021**, September 2021, online & Torino, Italy. (Oral)

[IC73] T. Thréard*, **S. Raetz**, D. Hurley, V. Gusev, *Imaging of Picosecond Acoustic Pulses Refraction at Interfaces by Time-Domain Brillouin Scattering*, **IEEE International Ultrasonics Symposium**, September 2021, online. (Poster)

[IC72] S. Sathyan, **S. Raetz***, J. Wolfman, B. Negulescu, G. Liu, J. L. Longuet, T. Thréard, V. Gusev, *Evaluation of Optical and Acoustical Properties of $Ba_{1-x}Sr_xTiO_3$ Material Library by Picosecond Laser Ultrasonics*, **IEEE International Ultrasonics Symposium**, September 2021, online. (Poster)

[IC71] S. Sathyan*, **S. Raetz**, E. Nicol, M. Edely, N. Chigarev, N. Cuvillier, J. Delozanne, M. Ducousso, V. Tournat, V. Gusev, *Evaluation of Epoxy Curing Dynamics near its Interface with Metals by Time-Domain Brillouin Scattering Three-Dimensional Imaging*, **IEEE International Ultrasonics Symposium**, September 2021, online. (Oral)

[IC70] C. Li, N. Chigarev, T. Thréard, K. Zhang, N. Delorme, V. Tournat, **S. Raetz**, H. Lu, V. E. Gusev*, *Diffusion of Coherent GHz Surface Acoustic Waves in Phononic Crystals*, **IEEE International Ultrasonics Symposium**, September 2021, online. (Oral)

[IC69] A. Husiev*, N. Chigarev, **S. Raetz**, V. Tournat, O. Matsuda, V. Gusev, *Opto-Acousto-Optical Depth-Profiling of Materials with an Ultrafast Optical Sagnac Interferometre*, **IEEE International Ultrasonics Symposium**, September 2021, online. (Poster)

[IC68] P. Ruello*, R. Gu, T. Perrault, G. Vaudel, M. Weis, V. Juvé, N. Chigarev, **S. Raetz**, V. Gusev, A. Levchuk, Z. Chen, A. Bulou, H. Bhaskaran, *Non-thermal transport of energy driven by photoexcited carriers in switchable solid states of GeTe*, **Materials Challenges for Memory**, April 2021, online. (Poster)

[IC67] C. Li*, N. Chigarev, T. Thréard, K. Zhang, A. Husiev, F. Niepceron, V. Tournat, **S. Raetz**, H. Lu and V. E. Gusev, *Generation and detection of coherent GHz surface phonons in superlattices*, **American Physical Society March Meeting 2021**, March 2021, online. (Oral)

[IC66] C. Li, N. Chigarev, T. Thréard, K. Zhang, A. Husiev, F. Niepceron, **S. Raetz**, H. Lu, and V. E. Gusev*, *Generation and detection of coherent picosecond surface acoustic waves in superlattices*, **e-Forum Acusticum 2020**, December 2020, Lyon, France. (Oral, invited)

[IC65] T. Thréard*, E. de Lima Savi, **S. Raetz**, S. Avanesyan, N. Chigarev, V. Tournat, D. H. Hurley, and V. E. Gusev, *Imaging grains in a polycrystal in 3D with nanoacoustic waves: signal processing methods*, **e-Forum Acusticum 2020**, December 2020, Lyon, France. (Oral)

[IC64] S. Sathyan*, T. Thréard, E. de Lima Savi, N. Chigarev, A. Bulou, V. Tournat, A. Zerr, V. E. Gusev, and **S. Raetz**, *Three-dimensional imaging of crystalline structure in water ice at high pressure*, **e-Forum Acusticum 2020**, December 2020, Lyon, France. (Oral)

[IC63] S. Sathyan*, **S. Raetz**, E. Nicol, M. Edely, N. Chigarev, N. Cuvillier, J. Delozanne, M. Ducousso, V. Tournat, and V. E. Gusev, *Three-dimensional imaging of metal/epoxy interface using time-domain Brillouin scattering*, **e-Forum Acusticum 2020**, December 2020, Lyon, France. (Oral)

[IC62] R. Hodé*, **S. Raetz**, V. E. Gusev, N. Cuvillier, M. Ducousso, and V. Tournat, *Attenuation of Zero-Group-Velocity Lamb modes for the nondestructive evaluation of adhesive bonding*, **e-Forum Acusticum 2020**, December 2020, Lyon, France. (Oral)

[IC61] N. Chigarev*, S. Sathyan, **S. Raetz**, V. Tournat, A. Bulou, A. Zerr, and V. E. Gusev, *Studying the polymerisation of 2-(hydroxyethyl) methacrylate using time-domain Brillouin scattering technique*, **e-Forum Acusticum 2020**, December 2020, Lyon, France. (Oral)

[IC60] C. Li*, V. E. Gusev, **S. Raetz**, N. Chigarev, V. Tournat, M. Hettich, and T. Dekorsy, *Coherent Control of Picosecond Acoustic Waves in a SESAM Structure*, **e-Forum Acusticum 2020**, December 2020, Lyon, France. (Oral)

[IC59] C. Li*, V. E. Gusev, **S. Raetz**, N. Chigarev, V. Tournat, M. Hettich, and T. Dekorsy, *Influence of N-ion Irradiation on the Coherent Acoustic Phonons in SESAM Structures*, **e-Forum Acusticum 2020**, December 2020, Lyon, France. (Oral)

[IC58] A. Husiev*, N. Chigarev, **S. Raetz**, V. Tournat, O. Matsuda, and V. E. Gusev, *Application of ultrafast optical interferometry for opto- acousto-optical depthprofiling of materials*, **e-Forum Acusticum 2020**, December 2020, Lyon, France. (Oral)

[IC57] R. Hodé, H. Li, J. Alcaraz, N. Chigarev, J. Blondeau, N. Cuvillier, M. Ducousso, V. Tournat, V. Gusev, and **S. Raetz***, *Laser-ultrasonics-based inspection of cracked or adhesively-bonded plates with zero group-velocity (ZGV) Lamb modes: imaging and characterization*, **AFPAC 2020**, January 2020, Surrey, UK. (Oral)

[IC56] J. D. G. Greener, E. de Lima Savi, A. V. Akimov, **S. Raetz**, Z. Kudrynskyi, Z. D. Kovalyuk, N. Chigarev, A. Kent, A. Patané, and V. Gusev*, *Imaging the interface of van der Waals nanolayers by picosecond ultrasonics*, **NJU-Wiley Joint Conference on Microstructured Materials and Advanced Applications**, November 2019, Nanjing, China. (Oral, invited)

[IC55] T. Thréard, **S. Raetz**, S. Avanesyan, N. Chigarev, V. Tournat, D. H. Hurley, V. Gusev*, *Three-dimensional opto-acousto-optic imaging of grain boundaries and grains in polycrystalline materials*, **Symposium On The Material Acoustics, Technologies And Industrialization (MATI 2019)**, October 2019, Nanjing, China. (Oral, invited)

[IC54] A. Zerr*, **S. Raetz**, M. Kuriakose, P. Djemia, S. M. Nikitin, N. Chigarev, A. Bulou, A. Lomonosov, V. E. Gusev, *Single-crystal elastic moduli Cij(P) and shear modulus G(P) of solid argon up to 64 GPa from time-domain Brillouin scattering*, **57TH EHPRG MEETING**, September 2019, Pragues, Czech Republic. (Oral)

[IC53] N. Chigarev*, E. De Lima Savi, **S. Raetz**, V. Tournat, A. Bulou, A. Zerr, V. E. Gusev, *Three-dimensional imaging of inhomogeneities in transparent solids compressed in a DAC by time-domain Brillouin scattering*, **57TH EHPRG MEETING**, September 2019, Pragues, Czech Republic. (Oral)

[IC52] E. de Lima Savi, S. Avanesyan, **S. Raetz***, N. Chigarev, V. Tournat, Z. Hua, D. H. Hurley, V. Gusev, *Imaging of grain boundaries in polycrystalline cerium dioxide with shear acoustic waves via time-domain Brillouin scattering*, **ICU 2019**, September 2019, Bruges, Belgium. (Oral, **invited**)

[IC51] A. V. Akimov*, E. de Lima Savi, J. D. G. Greener, **S. Raetz**, N. Chigarev, V. Tournat, A. J. Kent, A. Patane, V. Gusev, *Imaging the interface of van der Waals nanolayers by picosecond ultrasonics*, **ICU 2019**, September 2019, Bruges, Belgium. (Oral)

[IC50] R. Hodé*, **S. Raetz**, V. Gusev, F. Jenson, N. Cuvillier, M. Ducousso, V. Tournat, *Laser ultrasonic NDE of adhesively bonded joints: sensitivity of the coefficients of reflection to the practical adhesion*, **ICU 2019**, September 2019, Bruges, Belgium. (Oral)

[IC49] H. Li, **S. Raetz***, N. Chigarev, J. Blondeau, V. Tournat, V. Gusev, *Experimental observation of the effect of a crack on zero-group-velocity (ZGV) Lamb mode in a glass plate*, **ICU 2019**, September 2019, Bruges, Belgium. (Oral, **invited**)

[IC48] **S. Raetz***, N. Chigarev, S. M. Nikitin, M. Kuriakose, E. De Lima Savi, Q. M. Hu, Z. Hua, P. Djemia, A. Bulou, V. Tournat, D. H. Hurley, A. Zerr, V. E. Gusev, *Time-domain Brillouin scattering for nanoscale depth profiling of optically transparent materials: applications, limitations and perspectives*, **METANANO 2019**, July 2019, St. Petersburg, Russia. (Oral, **invited**)

[IC47] R. Gu*, T. Perrault, V. Juvé, G. Vaudel, M. Weis, A. Bulou, N. Chigarev, **S. Raetz**, V. E. Gusev, Z. Cheng, H. Bhaskaran, P. Ruello, *Photoinduced coherent acoustic phonons in phase change materials GeTe*, **ICPPP 2019**, July 2019, Moscow, Russia. (Oral)

[IC46] R. Hodé*, **S. Raetz**, V. Gusev, F. Jenson, N. Cuvillier, M. Ducousso, V. Tournat, *Laser ultrasonics for non-destructive evaluation of adhesively bonded joints*, **ICPPP 2019**, July 2019, Moscow, Russia. (Oral)

[IC45] T. Thréard, **S. Raetz***, E. De Lima Savi, N. Chigarev, S. Avanesyan, V. Tournat, Z. Hua, A. Zerr, D. H. Hurley, and V. E. Gusev, *Improved imaging of polycrystalline materials via time-domain Brillouin scattering by shear acoustic waves*, **ICPPP 2019**, July 2019, Moscow, Russia. (Oral)

[IC44] E. De Lima Savi*, N. Chigarev, **S. Raetz**, V. Tournat, A. Bulou, A. Zerr, V. E. Gusev, *Three-dimensional imaging of H2O ice at high pressure by time-domain Brillouin scattering*, **ICPPP 2019**, July 2019, Moscow, Russia. (Oral)

[IC43] M. Abi Ghanem*, L. Khoryati, **S. Raetz**, A. Khanolkar, R. Behrou, N. Boechler, and T. Dehoux, *A metamaterial that makes you cry: onion epidermis behaves as a locally resonant metamaterial*, **Phononics 2019**, June 2019, Tucson, USA. (Oral, invited)

[IC42] A. Carlotta, J. Margueritat, H. Mertani, A. Berthelot, Q. Martinet, X. Dagany, S. Monnier, J.-P. Rieu, C. Rivière, M. Abi Ghanem, L. Khoryati, **S. Raetz**, A. Khanolkar, R. Behrou, N. Boechler, and T. Dehoux*, *Phenotypic characterization of tissues with phonons: from tumors to biological metamaterials*, **Phononics 2019**, June 2019, Tucson, USA. (Oral, invited)

[IC41] T. Thréard*, **S. Raetz**, N. Chigarev, N. Martin, A. Zerr, M. Edely, and V. Gusev, *Detection of laser-generated shear acoustic waves in transparent diamond sample by Time-Domain Brillouin Scattering*, **7th International Summer School Son et Lumière**, March 2019, Les Houches, France. (Poster)

[IC40] **S. Raetz***, A. Lomonosov, S. Avanesyan, N. Chigarev, E. de Lima Savi, A. Bulou, N. Delorme, Z. Wen, Q. Jin, M. Kuriakose, A. Rousseau, G. Vaudel, P. Ruello, D. Wu, and V. Gusev, *Evaluation of the structural phase transition in multiferroic (Bi1-x Prx)(Fe0.95 Mn0.05)O3 thin films by by a multi-technique approach including picosecond laser ultrasonics*, **AFPAC 2019**, January 2019, Frejus, France. (Oral)

[IC39] R. Hodé*, **S. Raetz**, V. Gusev, M. Ducousso, N. Cuvillier, and V. Tournat, *Plane wave synthesis in laser ultrasonics for the nondestructive evaluation of adhesively bonded joints*, **AFPAC 2019**, January 2019, Frejus, France. (Oral)

[IC38] E. Meteyer, A. Gross, **S. Raetz**, N. Chigarev, J. Blondeau, V. Gusev, K. Bertoldi, and V. Tournat*, *Elastic Properties of 3D-Printed Micro-Trusses Measured by Laser Ultrasonics*, **2018 MRS Fall Meeting**, November 2018, Boston, USA. (Oral)

[IC37] M. Abi Ghanem, L. Khoryati, **S. Raetz**, A. Khanolkar, N. Boechler, and T. Dehoux*, *Anisotropic Sub-GHz Phonon Propagation In Fibrous Plant Cell Walls*, **International Mechanical Engineering Congress & Exposition (IMECE) 2018**, November 2018, Pittsburgh, USA. (Oral)

[IC36] M. Kuriakose, **S. Raetz**, Q. M. Hu, S. M. Nikitin, N. Chigarev, A. Bulou, A. Lomonosov, P. Djemia, V. E. Gusev, and A. Zerr*, *Inexistence of H2O Ice X and Single Crystal Elastic Moduli of Anisotropic H2O Ice VII to 82 GPa*, **56TH EHPRG MEETING**, September 2018, Aveiro, Portugal. (Oral)

[IC35] S. Sodki*, P. Djemia, N. Chigarev, G. Manthilake, E. Meteyer, **S. Raetz**, J. Blondeau, O. Brinza, F. Tessier, V. Gusev, and A. Zerr, *Elastic Moduli of Germanium Nitride Having Spinel Structure, γ-GE3N4, Measured using Brillouin Light Scattering and Laser Ultrasonics*, **56TH EHPRG MEETING**, September 2018, Aveiro, Portugal. (Oral)

[IC34] **S. Raetz***, N. Chigarev, A. Lomonosov, Z. Wen, Q. Jin, A. Bulou, N. Delorme, S. Avanesyan, A. Rousseau, G. Vaudel, P. Ruello, D. Wu, and V. Gusev, *Evaluation of the structural phase transition in multiferroic (Bi1-x Prx)(Fe0.95 Mn0.05)O3 thin films by time-domain Brillouin scattering*, **LU 2018**, July 2018, Nottingham, UK. (Oral)

[IC33] G. Yan, **S. Raetz***, H. Seo, K.-Y. Jhang, N. Chigarev, V. E. Gusev, and V. Tournat, *Evolution of the acoustic nonlinearity in heat-treated metallic plates revealed with laser-based zero-group velocity (ZGV) Lamb modes*, **LU 2018**, July 2018, Nottingham, UK. (Oral)

[IC32] M. Abi Ghanem, L. Khoryati, **S. Raetz**, A. Khanolkar, N. Boechler, and T. Dehoux*, *Anisotropic Sub-GHz Phonon Propagation In Fibrous Plant Cell Walls*, **LU 2018**, July 2018, Nottingham, UK. (Oral, invited)

[IC31] G. Yan, **S. Raetz***, N. Chigarev, V. E. Gusev, and V. Tournat, *Non-Contact Monitoring of Fatigue Damage in Metallic Plates Using Laser-Generated Zero-Group Velocity Lamb Waves*, **ICU 2017**, December 2017, Honolulu, USA. (Oral)

[IC30] M. Kuriakose, **S. Raetz***, Q.-M. Hu, S. M. Nikitin, N. Chigarev, V. Tournat, A. Bulou, A. Lomonosov, P. Djemia, V. E. Gusev, and A. Zerr, *Longitudinal sound velocities, elastic anisotropy and phase transition of highly pressurized H2O ice evaluated by picosecond acoustic interferometry*, **ICU 2017**, December 2017, Honolulu, USA. (Oral)

[IC29] **S. Raetz***, M. Kuriakose, S. M. Nikitin, N. Chigarev, V. Tournat, A. Bulou, A. Lomonosov, V. E. Gusev, and A. Zerr, *Elastic Anisotropy and Sound Velocities of Cubic H2O at Ultrahigh Pressures*, **ICPPP 2017**, July 2017, Bilbao, Spain. (Oral)

[IC28] **S. Raetz***, A. Lomonosov, M. Kuriakose, N. Chigarev, V. Tournat, V. E. Gusev, and A. Zerr, *Estimation of the Instantaneous Brillouin Frequency for Depth Profiling by Picosecond Acoustic Interferometry*, **ICPPP 2017**, July 2017, Bilbao, Spain. (Oral)

[IC27] G. Yan*, **S. Raetz**, N. Chigarev, V. E. Gusev, and V. Tournat, *Laser ultrasonic evaluation of cumulative fatigue damage in thin films using Zero-Group-Velocity (ZGV) Lamb modes*, **ICPPP 2017**, July 2017, Bilbao, Spain. (Oral)

[IC26] M. Lejman, G. Vaudel, I. C. Infante, C. Paillard, G. F. Nataf, M. Guennou, N. Chigarev, **S. Raetz**, J. Kreisel, V. E. Gusev, B. Dkhil, and P. Ruello*, *Ultrafast Acousto-Optic Mode Conversion in Ferroelectrics*, **ICPPP 2017**, July 2017, Bilbao, Spain. (Oral)

[IC25] N. Chigarev*, **S. Raetz**, G. Vaudel, P. Ruello, J. Blondeau, V. Tournat, and V. Gusev, *Application of Laser-Generated Picosecond Surface Acoustic Waves for the Study of Ferroelectric Materials*, **ICPPP 2017**, July 2017, Bilbao, Spain. (Oral)

[IC24] G. Yan*, **S. Raetz**, N. Chigarev, V. E. Goussev, and V. Tournat, *Laser-generated ZGV Lamb mode for non-destructive fatigue evaluation*, **6th International Summer School Son et Lumière**, April 2017, Les Houches, France. (Oral)

[IC23] G. Yan*, **S. Raetz**, N. Chigarev, V. E. Gusev, and V. Tournat, *All-optical evaluation of cumulative fatigue damage in solid plates using ZGV Lamb modes*, **AFPAC 2017**, January 2017, Marseille, France. (Oral)

[IC22] M. Kuriakose, **S. Raetz***, N. Chigarev, V. Tournat, B. Castagnede, A. Zerr, and V. E. Gusev, *Hypersound Attenuation Caused by Scattering in Polycrystalline Argon at High Pressures*, **LU 2016**, July 2016, Linz, Autriche. (Poster)

[IC21] M. Kuriakose*, **S. Raetz**, N. Chigarev, V. Tournat, B. Castagnede, A. Zerr, and V. E. Gusev, *Imaging of Laser-Induced Spatially Localized Structural Transformations in High Pressure Ice*, **LU 2016**, July 2016, Linz, Autriche. (Oral)

[IC20] V. E. Gusev*, N. Chigarev, M. Kuriakose, **S. Raetz**, V. Tournat, A. Bulou, B. Castagnede, and A. Zerr, *Laser Ultrasonics in High Pressure Research: from Measurements of Material Parameters towards Imaging of its Inhomogeneity and Structural Transitions*, **LU 2016**, July 2016, Linz, Autriche. (Oral, invited)

[IC19] G. Yan, **S. Raetz***, J.-P. Groby, A. Duclos, A. Geslain, N. Chigarev, and V. Tournat, *Experimental complex dispersion curve by use of spatial Laplace transform: application to ZGV Lamb*, **LU 2016**, July 2016, Linz, Autriche. (Oral)

[IC18] C. Prada*, J. Laurent, F. Bruno, S. Mezil, **S. Raetz**, P. Jehanno, and D. Royer,*Laser induced resonances in elastic wave guides*, **LU 2016**, July 2016, Linz, Autriche. (Oral, plenary)

[IC17] A. Zerr*, S. M. Nikitin, N. Chigarev, **S. Raetz**, M. Kuriakose, V. Tournat, A. Bulou, D. Gasteau, B. Castagnede, and V. E. Gusev, *Probing of Elastic Properties and Texture of Transparent Solids with sub-μm and μm-Resolution at Mbar Pressures Using Picosecond Laser Ultrasonic Interferometry: H2O Ice*, **2015 AGU Fall meeting**, December 2015, San Francisco, USA. (Oral, invited)

[IC16] A. Zerr*, M. Kuriakose, **S. Raetz**, N. Chigarev, S. M. Nikitin, D. Gasteau, V. Tournat, A. Bulou, B. Castagnede, and V. E. Gusev, *Evaluation of Homogeneity and Elastic Properties of Solid Argon at High Pressures Using Picosecond Laser Ultrasonic Interferometry*, **2015 AGU Fall meeting**, December 2015, San Francisco, USA. (Poster)

[IC15] M. Kuriakose, **S. Raetz***, N. Chigarev, S. M. Nikitin, V. Tournat, D. Gasteau, B. Castagnede, A. Zerr, and V. E. Gusev, *Application of picosecond laser ultrasonic interferometry for the evaluation of homogeneity and elastic properties of Argon at high pressures*, **ICPPP 2015**, September 2015, Novi Sad, Serbia. (Poster)

[IC14] **S. Raetz***, J. Laurent, T. Dehoux, D. Royer, B. Audoin, and C. Prada, *Laser-generated ZGV Lamb modes in glass plates: Effects of light refraction and application*, **ICPPP 2015**, September 2015, Novi Sad, Serbia. (Oral)

[IC13] S. M. Nikitin, N. Chigarev, M. Kuriakose*, V. Tournat, A. Bulou, **S. Raetz**, D. Gasteau, B. Castagnede, A. Zerr, and V. E. Gusev, *Imaging of sub-μm and μm-scale textures in transparent materials at Megabar pressures by picosecond laser ultrasonic interferometry*, **ICPPP 2015**, September 2015, Novi Sad, Serbia. (Oral)

[IC12] **S. Raetz***, J. Laurent, T. Dehoux, D. Royer, B. Audoin, and C. Prada, *Laser-generated ZGV Lamb modes in glass plates: application to accurate measurement of Poisson's ratio*, **LU 2015**, July 2015, Evanston, USA. (Oral)

[IC11] S. M. Nikitin, N. Chigarev, V. Tournat, A. Bulou, D. Gasteau, B. Castagnede, **S. Raetz***, A. Zerr, and V. E. Gusev, *Imaging μm-scale inhomogeneities and sub-μm texture in H2O ice at Megabar pressures by ultrafast optoacoustics*, **LU 2015**, July 2015, Evanston, USA. (Oral)

[IC10] F. Faëse*, **S. Raetz**, N. Chigarev, C. Mechri, V. E. Gusev, and V. Tournat, *Application of ZGV Lamb modes in non-destructive testing of composite materials*, **ICU 2015**, May 2015, Metz, France. (Oral)

[IC9] S. M. Nikitin, N. Chigarev*, V. Tournat, A. Bulou, D. Gasteau, B. Castagnede, **S. Raetz**, A. Zerr, and V. E. Gusev, *Imaging of sub-μm and μm-scale textures in H2O ice at Megabar pressures by picosecond laser ultrasonic interferometry*, **ICU 2015**, May 2015, Metz, France. (Oral)

[IC8] B. Audoin*, **S. Raetz**, and T. Dehoux, *Directivity diagram for an opto-acoustic source resulting of the absorption of an obliquely incident laser beam*, **LU 2013**, June 2013, Yokohama, Japan. (Oral)

[IC7] **S. Raetz***, T. Dehoux, and B. Audoin, *A reconstruction algorithm based on time reversal for the imaging of volume optoacoustic sources in solid media*, **ICU 2013**, May 2013, Singapore. (Oral)

[IC6] **S. Raetz***, T. Dehoux, and B. Audoin, *Directivity patterns of an asymmetric thermoelastic volume source: theory and experiments*, **AFPAC 2013**, January 2013, Fréjus, France. (Oral)

[IC5] **S. Raetz***, T. Dehoux, and B. Audoin, *Semi-analytical time-reversal imaging of a volume source in solids*, **Acoustics 2012**, April 2012, Nantes, France. (Oral)

[IC4] **S. Raetz***, T. Dehoux, and B. Audoin, *Asymmetric thermoelastic generation in semi-transparent materials with an oblique laser incidence*, **ICU 2011**, September 2011, Gdansk, Poland. (Oral, **R. W. B. Stephens Prize**)

[IC3] **S. Raetz***, T. Dehoux, and B. Audoin, *Calculation of directivity patterns of ultrasound generated by an obliquely incident laser*, **AFPAC 2011**, January 2011, Fréjus, France. (Oral)

[IC2] **S. Raetz***, T. Dehoux, and B. Audoin, *Oblique laser incidence to select laser-generated acoustic modes*, **3rd International Summer School Son et Lumière**, August 2010, Cargèse, France. (Poster)

[IC1] **S. Raetz***, T. Dehoux, and B. Audoin, *Oblique laser incidence to select laser-generated acoustic modes*, **LU 2010**, July 2010, Talence, France. (Poster)

3.4 Communications at National Conferences

[FC25] **S. Raetz***, N. Chigarev, V. Gusev, *Advances in time-domain Brillouin scattering and high-frequency surface acoustic waves for nanoscale material characterization*, **Journées Phonons dans les milieux complexes**, June 2025, Lyon, France. (Oral)

[FC24] N. Pajusco*, **S. Raetz**, N. Chigarev, M. Edely, A. Bulou, A. Zerr, V. Gusev, *Monitoring the non-hydrostatic pressure distribution in diamond anvil cell with time-domain Brillouin scattering 3D imaging*, **Congrès Français d'Acoustique (CFA) 2025**, April 2025, Paris, France. (Oral)

[FC23] N. Chigarev, **S. Raetz***, V. Gusev, *Theoretical and experimental study of gold nanolayer on diamond substrate*, **Congrès Français d'Acoustique (CFA) 2025**, April 2025, Paris, France. (Oral)

[FC22] **S. Raetz***, J. Alcaraz, S. Mézil, C. Prada, N. Chigarev, V. Gusev, *Mesure des courbes de dispersion des modes de bord d'ordre supérieur par ultrasons laser*, **Congrès Français d'Acoustique (CFA) 2025**, April 2025, Paris, France. (Oral)

[FC21] S. Mézil*, J. Alcaraz, D. Kiefer, N. Chigarev, **S. Raetz**, C. Prada, V. Gusev, *Génération de modes de Lamb ZGV dans une plaque de silicium*, **Congrès Français d'Acoustique (CFA) 2025**, April 2025, Paris, France. (Oral)

[FC20] N. Chigarev, **S. Raetz***, J. Blondeau, N. Pajusco, V. Tournat, V. Gusev, *Comment développer de nouvelles installations expérimentales d'ultrasons laser dans un laboratoire d'acoustique ?*, **Congrès Français d'Acoustique (CFA) 2025**, April 2025, Paris, France. (Oral)

[FC19] N. Pajusco*, **S. Raetz**, N. Chigarev, V. Gusev, *Qualitative comparison between experiment and numerical simulations for time-domain Brillouin scattering: the case of an inclined interface*, **Journées Jeunes Chercheurs en Acoustique Physique (JJCAP) 2023**, October 2023, Bordeaux, France. (Poster)

[FC18] J. Alcaraz*, **S. Raetz**, S. Mézil, C. Prada, N. Chigarev, V. Tournat, V. Goussev, *Étude des résonances acoustiques à proximité d'une fissure par ultrasons laser*, **Congrès Français d'Acoustique (CFA) 2022**, April 2022, Marseille, France. (Oral)

[FC17] L. Le Ridant*, **S. Raetz**, C. Desjouy, M. Abi Ghanem, T. Dehoux, *Modélisation de la dispersion d'une onde de surface dans un métamatériau anisotrope biosourcé*, **CFA 2022**, April 2022, Marseille, France. (Oral)

[FC16] N. Chigarev*, J. Zakrzewski, K. Strzalkowski, P. Sedzicki, V. Gusev, J. Alcaraz, V. Tournat, T. Thréard, **S. Raetz**, *Evaluation of elastic properties of $Cd_xZn_{1-x}Te$ crystals by picosecond laser ultrasonic techniques*, **CFA 2022**, April 2022, Marseille, France. (Oral)

[FC15] **S. Raetz***, T. Thréard, D. Hurley, V. Gusev, *Théorie de la diffusion Brillouin résolue en temps résultant d'une interaction non-collinéaire : prise en compte de l'aspect borné des faisceaux gaussiens et application à l'interaction acousto-optique près d'une interface inclinée*, **CFA 2022**, April 2022, Marseille, France. (Oral)

[FC14] **S. Raetz***, R. Hodé, N. Chigarev, J. Blondeau, N. Cuvillier, V. Gusev, M. Ducousso, V. Tournat, *Évaluation non destructive par ultrasons-laser d'assemblages aéronautiques collés*, **CFA 2022**, April 2022, Marseille, France. (Oral)

[FC13] T. Thréard*, **S. Raetz**, N. Chigarev, N. Martin, A. Zerr, M. Edely, V. Gusev, *Detection of laser-generated shear acoustic waves in transparent diamond sample by Time-Domain Brillouin Scattering*, **Journées Jeunes Chercheurs en Acoustique Physique (JJCAP) 2019**, June 2019, Paris, France. (Poster)

[FC12] R. Hodé*, **S. Raetz**, N. Chigarev, J. Blondeau, V. Gusev, V. Tournat, *Développement de méthodes ultrasons laser pour l'évaluation non destructive des assemblages aéronautiques collés*, **JJCAP 2019**, June 2019, Paris, France. (Poster)

[FC11] G. Yan*, **S. Raetz**, H. Seo, K.-Y. Jhang, N. Chigarev, V. E. Gusev, V. Tournat, *Non-contact study of heat-treated metallic plates using acoustic nonlinearity via zero-group-velocity (ZGV) Lamb modes*, **CFA 2018**, April 2018, Le Havre, France. (Oral)

[FC10] R. Hodé*, **S. Raetz**, V. Gusev, M. Ducousso, V. Tournat, *Caractérisation de collages aéronautiques par synthèse de fronts d'ondes en ultrasons laser*, **CFA 2018**, April 2018, Le Havre, France. (Oral)

[FC9] A. Husiev*, N. Delorme, **S. Raetz**, N. Chigarev, G. Vaudel, E. Meteyer, V. Tournat, P. Ruello, V. Gusev, *Photoacoustic nanoscopy*, **CFA 2018**, April 2018, Le Havre, France. (Oral)

[FC8] N. Chigarev*, N. Martin, A. Zerr, **S. Raetz**, V. Tournat, V. Gusev, *Laser-generated acoustic waves in tungsten thin films with oriented nanostructure*, **CFA 2018**, April 2018, Le Havre, France. (Oral)

[FC7] N. Chigarev*, A. Lomonosov, Z. Wen, S. Raetz, Q. Jin, A. Bulou, N. Delorme, S. Avanesyan, A. Rousseau, G. Vaudel, P. Ruello, D. Wu, V. Gusev, *Evaluation of the structural phase transition in multiferroic (Bi1-x Prx)(Fe0.95 Mn0.5)03 thin films by picosecond acoustic interferometry*, **CFA 2018**, April 2018, Le Havre, France. (Oral)

[FC6] G. Ruizhe*, G. Vaudel, N. Chigarev, A. Bulou, **S. Raetz**, N. Delorme, B. Dkhil, Z. Chen, H. Bhaskaran, V. Gusev, P. Ruello, *Probing the ferroelectric phase transition in GeTe thin films by ultrafast acoustics*, **CFA 2018**, April 2018, Le Havre, France. (Oral)

[FC5] G. Yan*, **S. Raetz**, N. Chigarev, V. E. Goussev, V. Tournat, *Evaluation tout optique du cumul du dommage en fatigue à l'aide des modes de Lamb à vitesse de groupe nulle*, **CMOI-FLUVISU 2017**, March 2017, Le Mans, France. (Oral)

[FC4] N. Chigarev*, M. Kuriakose, S. Nikitin, **S. Raetz**, A. Bulou, V. Tournat, D. Gasteau, B. Castagnède, A. Zerr, V. E. Gusev, *Imagerie et mesures de propriétés élastiques dans des milieux polycristallins non homogènes sous hautes pressions par acoustique picoseconde*, **CFA 2016**, April 2016, Le Mans, France. (Oral, invité)

[FC3] G. Yan*, S. Raetz, J.-P. Groby, A. Duclos, A. Geslain, N. Chigarev, V. Tournat, *Etude Expérimentale des Modes de Lamb à Vitesse de Groupe Nulle (ZGV) dans le Plan Complexe des Nombres d'Ondes*, **CFA 2016**, April 2016, Le Mans, France. (Oral)

[FC2] **S. Raetz***, T. Dehoux, B. Audoin, *Contrôle de la directivité des ondes acoustiques de volume par la réfraction optique en ultrasons laser*, **CFA 2014**, April 2014, Poitiers, France. (Poster)

[FC1] **S. Raetz***, J. Laurent, T. Dehoux, D. Royer, B. Audoin, C. Prada, *Génération thermoélastique d'ondes de Lamb dans des matériaux de faible absorption optique : influence de l'angle d'incidence du laser source*, **CFA 2014**, April 2014, Poitiers, France. (Oral)