

Arthur LE SAUX

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Contact Information

🏠 Laboratoire de Météorologie Dynamique,
Sorbonne Université, Tour 45-55, 3^{ème} étage,
4 Place Jussieu, 75005 Paris

☎ +33 (0)6 50 53 28 73

✉ alesaux@proton.me

📄 [orcid:0000-0002-6686-7956](https://orcid.org/0000-0002-6686-7956)

🌐 <https://arthurlesaux.github.io/>

Research experience

- 2023 – Present **Postdoctoral Research Fellow**, Laboratoire de Météorologie Dynamique, Paris, France
Funded by the [SOUND ANR](#) grant.
*Atmospheric dynamics of Neptune and Uranus using a **General Circulation Model***
- 2019 – 2023 **Postgraduate Research Student**, Physics & Astronomy, University of Exeter, UK
Co-direction: CRAL, Ecole Normale Supérieure, Lyon, Université de Lyon, France
Supervisors: Prof. Isabelle Baraffe & Dr. Thomas Guillet
*Understanding **mixing processes in stars** using **hydrodynamical simulations***
- 2019 **Master's thesis** (5 months), AIM-CEA, Université Paris-Saclay, Gif-sur-Yvette, France
Supervisors: Dr. Rafael A. García & Dr. Lisa Bugnet
*Identification and **classification of pulsating stars** by combining classical **asteroseismology** and **intelligent methods***
- March 2019 **Observation Trainee** (1 week), IRAM, Granada, Spain
Supervisor: Dr. Pierre Guillard
*Turbulence and proto-stellar **outflows mapping** in **L1251-A***
- 2018 **Master's thesis** (6 months), Laboratoire de Météorologie Dynamique, Paris, France
Supervisor: Dr. Sébastien Lebonnois
*Study of large-scale **gravity waves** in the deep **atmosphere of Venus***
- Summer 2017 **Research Intern** (3 months), Physics & Astronomy, University of Exeter, UK
Supervisor: Prof. Isabelle Baraffe
*Theoretical and numerical approach of **hydrodynamic processes in stellar interiors***
- 2017 - 2018 **Research Project** (1 year), Institut des Nanotechnologies de Lyon, Ecully, France
Supervisors: Dr. Bertrand Vilquin & Dr. Pedro Rojo Romeo
*Theoretical and practical study on **hyperbolic metamaterials***

Education

- 2023 **PhD in Physics & Astronomy**, University of Exeter, UK
Awarded on June 1st, 2023
- 2019 **Master of Science**, Observatoire de Paris, France
Astronomy, Astrophysics & Space Engineering
*Specialisation: **Stellar physics, Asteroseismology, Numerical Methods, Data Science***
- 2018 **Master of Engineering**, Ecole Centrale de Lyon, France
*Specialisation: **Hydrodynamics, Nanotechnologies and Biotechnology***
- 2015 **Bachelor of Science**, Sorbonne Université, Paris, France
Mechanical Engineering
*Specialisation: **Fluid dynamics, Acoustics, Thermal Physics***
- 2011 **French Baccalaureate**, with Honours, Lycée Alphonse Daudet, Nîmes, France

Grants & Awards

- 2022 Kavli Summer Program in-person workshop, Göttingen, Germany (~1000€)
- 2021 Kavli Summer Program fellowship (Awarded to 8 fellows/ year) (2000\$)
- 2021 1st Prize Postgraduate Conference Presentations, Exeter, UK (50£)
- 2019 Artistic residency, Le Port des Créateurs, Toulon, France (6500€)
- 2019 College funded PhD Studentship (3.5 years), University of Exeter, UK (~15000£ /yr)
- 2019 Observation time (36h), IRAM 30m telescope, Granada, Spain

Oral presentations (22)

- 2023 Generic PCM days, LMD, Paris, France
- 2023 Beyond Boussinesq workshop, ENS Lyon, France (**Invited talk**)
- 2023 MUSIC Team Talk, online
- 2023 Future of solar modelling workshop, Sierre, Switzerland (**Invited review**)
- 2023 LESIA, Observatoire de Paris, Université PSL, Meudon, France (**Invited seminar**)
- 2023 Institut de Recherche en Astrophysique et Planétologie, Toulouse, France (Seminar)
- 2023 Astrophysics group seminar, University of Exeter, UK (Seminar with L. Fourdrinier)
- 2023 AAS #241 meeting, Seattle, USA (remote Dissertation talk)
- 2022 Observatoire de Genève, Switzerland (**Invited seminar**)
- 2022 Fluid Dynamics of the Sun and stars workshop, Göttingen, Germany
- 2022 MUSIC Team Talk, University of Exeter
- 2022 Angular momentum in stellar systems workshop, AIM-CEA, Gif-sur-Yvette, France
- 2022 Cool Stars 21, Toulouse, France (Plenary session)
- 2022 PNPS workshop: Codes for stellar physics, Meudon, France
- 2022 EAS meeting 2022, Session 21
- 2022 Good Vibrations seminar series, online (Seminar)
- 2021 Astrophysics group seminar, University of Exeter, UK (Seminar)
- 2021 MUSIC Team Talk, online
- 2021 Kavli Summer Program in Astrophysics, online
- 2021 MUREX festival, Toulon, France (**Invited Talk with L. Fourdrinier**)
- 2021 EMPS PGR Conference 2021, Exeter, UK

Posters (9)

- 2023 Meeting SF2A 2023, Strasbourg, France
- 2023 AAS #241 meeting, Seattle, USA
- 2022 TASC13/KASC6 workshop, Leuven, Belgium
- 2022 EAS meeting 2022, Session 21
- 2021 Kavli Summer Program in Astrophysics 2021, online
- 2021 Cool Stars 20.5, online ([Poster](#))
- 2021 EMPS PGR Conference 2021, Exeter, UK
- 2020 Exosystem 1, Paris, France
- 2019 Meeting SF2A, Nice, France

Conference organising

- 2023 Committee role for the organisation of the Parallel Session “Open questions in stellar (radiation-)fluid dynamics: from dwarfs to giants” at National Astronomy Meeting 2023, Cardiff University, 3rd-7th July 2023
- 2022 Committee role for the organisation of the EMPS PGR conference 2022 and design of the [conference website](#), University of Exeter, 4th-5th April 2023

Teaching & Student supervision

- 2023 Teaching Assistant at [MESA summer school](#), Budapest, Hungary
- 2022 Co-supervision of a an undergrad student from University of Toronto (Canada) in the context of [Simons-NSBP Scholars Program 2022](#) hosted by the CCA, Flatiron Institute (New-York, USA)
- 2022 Co-supervision of a Master student from ENS Lyon, France
- 2020 – 2023 Demonstrator for 2nd year Physics problem class in Quantum Mechanics, Electromagnetism, Thermal Physics and Condensed Matter (96 hr/yr)
- 2020 Co-supervision of a Master student from ENS Lyon, France

Collaboration with an artist

- 2022 *La lune dans un œil et le soleil dans l'autre*, Art exhibition of Léo Fourdrinier with some art works done in the context of artistic collaboration, [CACN](#), Nîmes, France.
- 2020 *PULSE*, Art Exhibition on the theme of asteroseismology, in collaboration with Léo Fourdrinier, L'Axolotl Gallery, Toulon, France.
- Since 2019 Active collaboration with [Léo Fourdrinier](#), plastic artist working in Toulon (France). Through regular discussion, Léo reinterprets my research on waves that propagate in stellar interiors for his plastic work. This collaboration started during the [BOOSTER #4](#) artistic residency at [Le Port des Créateurs](#) in Toulon, in 2019.

Outreach

- 2023 *The music of stars*, public talk at The Cabin, Praha, Czech Republic
- 2022 Scientific mediation action for high school students, organised by Le Cercle FESR and Declics, Lycée Du Parc, Lyon, France
- 2019 *Street conf'*, Presentation of scientific research and stellar physics to the public in the streets, Marseille, France