

AUORE BETRANHANDY

PERSONAL INFORMATION

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EDUCATION

2017–Now **PhD on neutrino interactions in Core-Collapse Supernova simulations using NuLib, FLASH and, GR1D.**
Supervisor: E. P. O'Connor · evan.oconnor@astro.su.se

2015–2017 **Master in Astrophysics, Space Sciences and Planetary Science**
University Toulouse III, Paul Sabatier - France

2011–2015 **Bachelor of physics**
Fundamental physics and information technology
University of Rennes 1, Rennes - France

Internships

2017 - **Neutrino transport in Core-Collapse Supernova simulations.**
Advisor: B. Müller
Institute : Queen's University of Belfast, Northern Ireland
Duration: 4 months

2016 - **Modelling of the evolution of the Supernova SN 132 D and comparison with Fermi gamma-ray data.**
Advisor: P. Martin
Institute : Institut de Recherche en Astrophysique et Planétologie, Toulouse
Duration: 9 weeks

2015 - **Determination of the distance to the protoplanetary disk Gomez Hamburger with Herschel data.**
Advisor: O. Berné
Institute : Institut de Recherche en Astrophysique et Planétologie, Toulouse
Duration : 7 weeks

THESES, PUBLICATIONS, TALKS AND SUMMER SCHOOLS

Licenciate **Neutrino treatments and the impact on core-collapse supernova simulations**
Jury : G. Raffelt, A. Jerkstrand, M. Janson

Master thesis **Neutrino Transport in Core Collapse Supernovae Simulations**
Jury : N. Webb, M. Rieutord, G. Fruit

Publications

Impact of neutrino pair-production rates in core-collapse supernovae
A. Betranhandy, E.P. O'Connor
DOI : [10.1103/PhysRevD.102.123015](https://doi.org/10.1103/PhysRevD.102.123015)

Equation of State Dependence of Gravitational Waves in Core-Collapse Supernovae
O. E. Andersen, S. Zha, A. da Silva Schneider, A. Betranhandy, S. M. Couch, E. P. O'Connor
DOI : [arXiv:2106.09734](https://arxiv.org/abs/2106.09734)

Equation of State and Progenitor Dependence of Stellar-mass Black Hole Formation

A. da Silva Schneider, E. P. O'Connor, E. Granqvist, A. Betranhandy, S. M. Couch,
DOI : 10.3847/1538-4357/ab8308

Talks

- IAU Symposium 362 · Online · November 2021
- XXth Nuclear Astrophysics Workshop · Ringberg Castle · November 2021
- APS April meeting · Online · April 2021
- Extreme Object meeting · Online · December 2020
- Compact objects for all · Lund · January 2020
- MICRA · Jena · August 2019
- CCA summer school for plasma physics · New-York · August 2019

Winter/Summer Schools

- CCA summer school for plasma physics · New-York · June-August 2019
- 55th Karpacz Winter School of Theoretical Physics · Karpacz · February 2019
- NBIA DARK Summer School: Multi-Messengers from Compact Sources · Copengagen · July 2018
- The physics of macronova · Stockholm · June 2018
- TDLI summer school for computational astrophysics · Shanghai · May 2018

TEACHING

Teacher Introduction to computational tools

TA Stellar evolution laboratory
Classical mechanic and thermodynamic

COMPUTER SKILLS

Programming Fortran, Python, C, Matlab

Other Latex

OTHER INFORMATIONS

Languages

- FRENCH · Mother tongue
- ENGLISH · Fluent
- SPANISH · Basic
- SWEDISH · Basic