

PERSONAL INFORMATION

Dr. Andreas Flörs
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PROFESSIONAL EXPERIENCE

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|-------------------|---|
| 03/2021 – present | Post-doctoral Research Scientist at GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany in the Nuclear Astrophysics Group of Prof. Dr. Gabriel Martínez-Pinedo |
| 09/2020 – 02/2021 | Post-doctoral Research Scientist at Max-Planck-Institut für Astrophysik, Garching, Germany in the Stellar Astrophysics Group of Prof. Dr. Wolfgang Hillebrandt |
| 05/2015 – 08/2015 | Student trainee at TU Munich, Germany in the Chair E62 of Prof. Dr. Laura Fabietti; Development and improvement of a GEM-TPC detector simulation |

EDUCATION

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| 03/2017 – 08/2020 | Ph.D. in Astrophysics, Max-Planck-Institut für Astrophysik, Garching, Germany Thesis: The Neutron-Rich Ejecta of Type Ia Supernovae and Constraints on the Exploding Mass of their Progenitors Supervisor: Prof. Dr. Wolfgang Hillebrandt Date awarded: 17/08/2020 Co-Supervisor: Dr. Jason Spyromilio |
| 04/2015 – 02/2017 | M.Sc. in Nuclear, Particle and Astrophysics, TU Munich, Munich, Germany Thesis: The Diversity of Nebular Spectra of Type Ia Supernovae Supervisor: Prof. Dr. Wolfgang Hillebrandt Final mark: 1.3 |
| 10/2011 – 03/2015 | B.Sc. in Physics, TU Munich, Munich, Germany Thesis: Is the Higgs boson THE Higgs boson? Supervisor: Prof. Dr. Martin Beneke Final mark: 1.5 |

AWARDS & HONORS

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| 12/2024 | ELEMENTS grant proposal, 6 000€ grant for early career researcher workshop support, Frankfurt, Germany. |
| 05/2024 | Award for best poster by an early career researcher at 2024 ELEMENTS annual meeting (2500€travel grant), Frankfurt, Germany. |
| 03/2022 | ESO Very Large Telescope Time Allocation. 34 hours at the ESO VLT at Paranal, Chile granted for near-IR spectroscopy of thermonuclear supernovae. Equiv- alent value: 250 000€ (60 000€/night), GSI Darmstadt, Germany. |
| 09/2020 | Kippenhahn prize. Best scientific paper written by a student at the Max-Planck Institute for Astrophysics in 2019 (1000€travel grant), Garching, Germany. |
| 04/2019 | Space Telescope Science Institute (STScI) Spring Symposium 2019 travel grant over 700€ |
| 01/2018 | Award for best poster by an early career researcher at Supernovae - From Simulations to Observations and Nucleosynthetic Fingerprints, Bad Honnef, Germany |
| 10/2017 | Press release: First Light from Gravitational Wave Source, ESO Garching, Germany[https://www.eso.org/public/news/eso1733/]. |
| 03/2017 – 02/2019 | ESO studentship programme , PhD support for two years at the European Organisation for Astronomical Research in the Southern Hemisphere (ESO, ~60 000€). |
| 10/2011 – present | Max Weber-Programm Alumnus: Implementation of the German National Merit Foundation according to the Bavarian Elite Support Act for highly-gifted students at universities in Bavaria (~20 000€). |
| 07/2011 | Best Abitur Certificate in Bavaria. |

SCIENTIFIC COLLABORATIONS

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| 10/2023 – present | HEAVYMETAL: How Neutron Star Mergers make Heavy Elements, member of the atomic structure and radiative transfer groups. |
| 10/2019 – present | adH0cc: Accurate determination of H0 with core-collapse supernovae; responsible for data reduction, including the development of data reduction pipelines. |
| 03/2019 – present | TARDIS-RT: TARDIS-RT is the collaboration behind TARDIS – an open-source Monte Carlo radiative-transfer spectral synthesis code for 1D models of supernova and kilonova ejecta; member of the core development team and maintainer of the atomic data repository Carsus . |
| 06/2018 – 09/2022 | StaNdART: A repository of standardized test models and outputs for supernova radiative transfer; Organisation lead representative of the TARDIS-RT collaboration. |
| 02/2018 – present | ENGRAVE: Electromagnetic counterparts of gravitational wave sources at the Very Large Telescope; ‘ <i>Theory Group</i> ’ kilonova spectroscopy coordinator and member of the ‘ <i>Spectroscopic Observations</i> ’ and ‘ <i>Public Outreach</i> ’ groups. |
| 03/2017 – present | ePESSTO+: Public ESO Spectroscopic Survey for Transient Objects; member of the ‘ <i>Faint & Fast Transients</i> ’ and ‘ <i>Nearby Thermonuclear Supernovae</i> ’ research groups. |

QUALIFICATIONS AND SCHOOLS

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| 12/2022 | Seminar on Interdisciplinary Communication and Collaboration: Learning the principles of interdisciplinary science and practising communicating across disciplinary boundaries. |
| 08/2019 | Second Radiative Transfer Code Comparison Workshop at the Max-Planck-Institut für Astrophysik. Analysis and comparison of synthetic supernova spectra computed by 9 different codes. I lead the contribution of the <i>TARDIS-RT</i> collaboration. |
| 11/2018 | Neutron Star Merger Training Workshop in Bertinoro, Italy on data reduction and interpretation for electromagnetic counterparts of gravitational wave events. |
| 10/2018 | Leadership and mentoring training at ESO Garching, Germany. Introduction into delegating tasks, communicating expectations, leading students. |
| 06/2018 | First Radiative Transfer Code Comparison Workshop at the Weizmann Institute for Science, Israel. Analysis and comparison of synthetic supernova spectra computed by 9 different codes. |
| 03/2018 | Communication skills training at ESO Garching, Germany. How to give a science talk aimed at different audiences. |
| 05/2017 | First Italian Summer School on Astrostatistics at the University of Milan, Italy. Hands-on workshop on Bayesian statistics, inference and statistical sampling. |
| 1/2017 – 06/2017 | MPA/ESO Radiative Transfer Course at the Max-Planck-Institut für Astrophysik, Germany. Basics of radiative transfer theory and numerical methods for solving LTE and non-LTE radiative transfer problems. |

SCIENTIFIC COMMUNITY WORK

JOURNAL REFEREE

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| 03/2021 – present | Referee for Nat. Rev. Phys., A&A, MNRAS, ApJL, PoS, OJAP, PASP, I peer-reviewed a total of 9 manuscripts. |
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CONFERENCE, WORKSHOP AND SEMINAR ORGANISATION

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| 01/2025 | Main organizer of the <i>Hirscheegg 2025 - Nucleosynthesis of Heavy Elements: r-process</i> workshop , Hirscheegg, Austria. I obtained the necessary funds for the workshop through an ELEMENTS cluster proposal (25 000€), contacted potential speakers, and was responsible for the communication and logistics with both participants and the conference venue. |
| 2023 | Organizer of the <i>IReNA Online Seminar</i> , Michigan State University, USA. I was responsible for the speaker selection and talk moderation. |
| 06/2020 | LOC Member of the ESO Conference <i>H₀2020</i> , ESO Garching, Germany. As part of the LOC I was in charge of the conference schedule and communicating with invited speakers. |
| 08/2019 | LOC Member of the <i>Second Radiative Transfer Workshop</i> , Max-Planck-Institut für Astrophysik, Germany. I balanced contributions of the 9 participating radiative transfer teams. |

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| 08/2018 | Co-Organizer of the <i>Neural Network Hands-on Workshop</i> , ESO Garching, Germany. My contribution was the booking of the seminar rooms and communicating with invited speakers. |
| 06/2018 – 02/2019 | Co-Organizer of the <i>Supernova Meeting</i> , ESO Garching, Germany. I was in charge of finding potential speakers and moderating the discussion. |
| 03/2017 – 02/2019 | Organizer ESO Wine & Cheese Seminar , ESO Garching, Germany. I contributed to the food preparation, speaker selection and discussion moderation. |

SCIENTIFIC COMMITTEES

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| 03/2021 | ESO Observing Programmes Committee Member Period 108 , ESO Garching, Germany. |
| 04/2020 | <i>TARDIS-RT</i> Core Committee Member , Max-Planck-Institut für Astrophysik, Germany. |
| 11/2019 | Organization Lead, <i>TARDIS-RT</i> code comparison , Max-Planck-Institut für Astrophysik, Germany. |
| 10/2018 | ESO Observing Programmes Committee Scientific Assistant Period 103 , ESO Garching, Germany. |
| 10/2017 | ESO Observing Programmes Committee Scientific Assistant Period 101 , ESO Garching, Germany. |

OUTREACH AND PUBLIC ENGAGEMENT

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| 10/2024 | Public outreach talk at Sternwarte Hofheim , Hofheim, Germany. Talk title: <i>Explosive Universe – Supernovae</i> . |
| 07/2024 | Article in the German popular science magazine “Sterne und Weltraum” , GSI Darmstadt, Germany. Title: <i>Kilonovae in 3-D</i> . |
| 03/2024 | Wissenschaft für Alle , GSI Darmstadt, Germany. Talk title: <i>Neutronensternverschmelzungen – Einblicke in den Geburtsort der schwer(st)en Elemente im Universum</i> . |
| 11/2023 | Public outreach talk at Sternwarte Hofheim , Hofheim, Germany. Talk title: <i>Neutron star mergers and synthesis of the heavy elements</i> . |
| 07/2023 | Universe on Tour Exhibition Guide , Hofheim, Germany. |
| 10/2020 | CodeForCause YouTube Live Stream , Scientific computing for undergraduates across the globe. |
| 09/2020 | TARDIS Highschool Program Instructor , Teaching scientific programming and supernova physics to high school students in the US. |
| 2018 & 2019 | Presenter for the <i>European Researcher’s Night</i> , ESO Supernova, Garching, Germany. |
| 07/2018 | Lunar Eclipse Event , ESO Supernova, Garching, Germany. <i>Telescope assistance and public talks</i> . |
| 2018 – 2022 | Presenter at the ESO Supernova , ESO Supernova, Garching, Germany. I led exhibition tours and 60-minute-long planetarium presentations on the night sky. |
| 2016 – 2018 | ESO Open House Day , ESO Garching, Germany. <i>Comet building for children</i> . |

MENTORING AND TEACHING

COMPUTING

- 05/2024 – 07/2024 **Google Summer of Code 2024 Mentor** for the *TARDIS-RT* collaboration. Darmstadt, Germany. I mentored Asish Kumar on *TARDIS Benchmarking and Performance Improvement*.
- 05/2023 – 07/2023 **Google Summer of Code 2023 Mentor** for the *TARDIS-RT* collaboration. Darmstadt, Germany. I mentored Ansh Kumar on *Development of an Inner Boundary Velocity Solver for TARDIS*.
- 05/2022 – 07/2022 **Google Summer of Code 2022 Mentor** for the *TARDIS-RT* collaboration. Darmstadt, Germany. I mentored Atharva Arya on *Improving the Carsus Testing Framework*.
- 05/2020 – 07/2020 **Google Summer of Code 2020 Mentor** for the *TARDIS-RT* collaboration. Darmstadt, Germany. I mentored Ezequiel Pássaro on *Comparing TARDIS spectra generated with different atomic data sources*.
- 05/2019 – 07/2019 **Google Summer of Code 2019 Mentor** for the *TARDIS-RT* collaboration. Darmstadt, Germany. I mentored Ezequiel Pássaro on *Expansion of the TARDIS Atomic Database*.

STUDENT SUPERVISION

- 06/2024 – 09/2024 **Summer Student Advisor** GSI Helmhottzentrum für Schwerionenforschung, Germany, Adriel Rodriguez, Project: *Spectrum dependence on atomic databases*.
- 05/2022 – 09/2022 **Undergraduate Student Advisor** GSI Helmhottzentrum für Schwerionenforschung, Germany, Carsten J. Becker, Bachelor Thesis.
- 07/2021 – 07/2022 **Undergraduate Student Advisor** GSI Helmhottzentrum für Schwerionenforschung, Germany, Gerrit Leck, Master Thesis.
- 08/2020 – 02/2021 **Undergraduate Student Advisor** Michigan State University, USA, Isaac Smith.
- 07/2019 – 02/2021 **Undergraduate Student Advisor** Max-Planck-Institut für Astrophysik, Germany, Ezequiel Pássaro.

UNIVERSITY TEACHING


- 06/2017 **Lecturer at the MPA/ESO Radiative Transfer Course**, Max-Planck-Institut für Astrophysik, Germany.
- 10/2015 – 10/2018 **Teaching Assistant for undergraduate physics classes**, TU Munich, Germany: *Theoretical Electrodynamics; Relativity, Particles and Fields; Advanced Nuclear, Particle and Astrophysics; Extragalactic Astrophysics*.

I am an expert user and developer of the radiative transfer code **TARDIS**, including the atomic data library and aggregation tool **Carsus**, as well as the atomic structure code **FAC**. I am highly experienced in analysing radiative transfer simulations and astronomical observations.

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| TARDIS | <p>Core-developer of TARDIS: https://github.com/tardis-sn/tardis</p> <p>TARDIS is the most widely used astrophysical Monte Carlo radiative transfer code for explosive transients, written entirely in Python/Numba. The code is well tested and documented. As a core developer, I have contributed and reviewed code, as well as supervised several Google Summer of Code and undergrad students working on TARDIS.</p> |
| Carsus | <p>Maintainer of the Carsus package: https://github.com/tardis-sn/carsus</p> <p>Carsus is a software package designed to manage and process atomic datasets for radiative transfer codes. It facilitates the ingestion of atomic data from various reputable sources, such as the NIST Atomic Spectra Database, and converts them into formats compatible with radiative transfer codes. This functionality is particularly important for astrophysical phenomena, including supernovae and stellar atmospheres, where accurate atomic data are crucial for modelling radiative processes. I am a contributor and maintainer of the Github Carsus repository.</p> |
| PypeIt | <p>Contributor to the PypeIt project: https://github.com/pypeit/PypeIt</p> <p>PypeIt is a Python-based data reduction pipeline for astronomical spectroscopy, converting raw telescope observations into calibrated, science-ready spectra. It supports all major telescopes and spectrographs and automates tedious image calibration and processing tasks. Designed for flexibility and high-quality data processing, PypeIt is widely used in observational astronomy. As part of the adH0cc project, I contributed image reduction pipelines for the FORS2 spectrograph at ESO's Very Large Telescope in Chile.</p> |
| FAC | <p>Experienced user of the FAC code: https://github.com/flexible-atomic-code</p> <p>The Flexible Atomic Code (FAC) is a computational package for atomic structure calculations and modelling of atomic processes, and is widely used in astrophysics and plasma physics. It allows the calculation of energy levels, radiative transition rates, autoionization rates, and collisional excitation cross-sections for complex atomic systems. I added additional potential models into FAC, allowing for a direct comparison of its calculated properties to other atomic structure codes such as Autostructure.</p> |
| non-LTE MCRT | <p>Developed my own non-LTE Monte-Carlo radiative transfer code as part of my Ph.D. programme.</p> <p>The code solves the non-local thermodynamic equilibrium equations, including electron-ion collisional excitation and ionisation processes and photon self-absorption. Heating by gamma-rays and charged leptons is included, following the decay chains from nuclear data on the ENSDF. The code can produce nebular (coronal) emission spectra of supernovae and kilonovae.</p> |

LIST OF PUBLICATIONS

I have published 27 peer-reviewed publications in leading astrophysical journals, including 4 first-author and 4 second-author publications. These papers have received 4148 citations (h-index of 16) according to ADS (Astrophysics Data System). I have submitted one additional first-author and one additional second-author paper for peer-review.

My submitted and published papers can be found in my ADS library:  [NV9aw-58TfmDVucVYZUrqw](#)

FIRST AND SECOND AUTHOR PUBLICATIONS

1. **FLÖRS**, A., SILVA, R. F., MARQUES, J. P., ET AL. Calibrated Lanthanide Atomic Data for Kilonova Radiative Transfer I. Atomic Structure and Opacities, submitted to MNRAS
2. SILVA, R. F., **FLÖRS**, A., MARQUES, J. P., ET AL. Systematic Bayesian Optimization for Atomic Structure Calculations of Heavy Elements, *arXiv e-prints (2025)*, arXiv:2502.13250, submitted to Phys. Rev. A.
3. **FLÖRS**, A., SILVA, R. F., DEPRINCE, J., ET AL. Opacities of singly and doubly ionized neodymium and uranium for kilonova emission modeling, *MNRAS* 524, 2, 3083, 2023, arXiv:2302.01780 (**19 citations**)
4. SHINGLES, L. J., **FLÖRS**, A., SIM S. A., ET AL. Modelling the ionization state of Type Ia supernovae in the nebular phase, *MNRAS* 512, 4, 6150, 2022, arXiv:2203.16561 (**17 citations**)
5. **FLÖRS**, A., The Neutron-Rich Ejecta of Type Ia Supernovae and Constraints on the Exploding Mass of Their Progenitors, PhD Thesis, Technical University Munich, Physics Department, 2020 (NASA ADS:2020PhDT.....6F)
6. **FLÖRS**, A., SPYROMILIO, J., TAUBENBERGER, S., ET AL. Sub-Chandrasekhar progenitors favoured for type Ia supernovae: Evidence from late-time spectroscopy, *MNRAS* 491, 2, 2902, 2020, arXiv:1909.11055 (**60 citations**)
7. TAUBENBERGER, S., **FLÖRS**, A., VOGL, C., ET AL. SN 2012dn from early to late times: 09dc-like supernovae reassessed, *MNRAS* 488, 4, 5473, 2019, arXiv:1907.06753 (**31 citations**)
8. **FLÖRS**, A., SPYROMILIO, J., MAGUIRE, K., ET AL. Limits on stable iron in Type Ia supernovae from near-infrared spectroscopy, *A&A* 620, A200, 2018, arXiv:1810.10781 (**15 citations**)
9. DHAWAN, S., **FLÖRS**, A., LEIBUNDGUT, B., ET AL. Nebular spectroscopy of SN 2014J: Detection of stable nickel in near infrared spectra, *A&A* 619, A102, 2018, arXiv:1805.02420 (**27 citations**)

CO-AUTHOR PUBLICATIONS

10. POGNAN, Q., WU, M.-R., MARTÍNEZ-PINEDO, G., SILVA, R. F., JERKSTRAND, A., GRUMER, J., AND **FLÖRS**, A. Actinide signatures in low electron fraction kilonova ejecta, *MNRAS* 536, 3, 2973, 2025, arXiv:2409.16210 (**6 citations**)
11. COLLINS, C. E., SHINGLES, L. J., BAUSWEIN, A., SIM, S. A., SOULTANIS, T., VIJAYAN, V., **FLÖRS**, A. ET AL. Towards inferring the geometry of kilonovae, *MNRAS* 529, 2, 1333, 2024, arXiv:2309.05579 (**8 citations**)
12. SHINGLES, L. J., COLLINS, C. E., VIJAYAN, V., **FLÖRS**, A. ET AL. Self-consistent 3D Radiative Transfer for Kilonovae: Directional Spectra from Merger Simulations, *ApJL* 954, L41, 2023, arXiv:2306.17612 (**21 citations**)
13. KWOK, L. A., JHA, S. W., TEMIM, T., (+11 ADDITIONAL AUTHORS), **FLÖRS**, A. ET AL. A JWST Near- and Mid-infrared Nebular Spectrum of the Type Ia Supernova 2021aefx, *ApJL* 944, L3, 2023, arXiv:2211.00038 (**26 citations**)

14. DONG, Y., VALENTI, S., POLIN, A., BOYLE, A., **FLÖRS**, A. ET AL. SN 2016dsg: A Thermonuclear Explosion Involving a Thick Helium Shell, *ApJ* 934, 102, 2022, arXiv:2206.07065 (**13 citations**)
15. SILVA, R. F., SAMPAIO, J. M., AMARO, P., **FLÖRS**, A. ET AL. Structure Calculations in Nd III and U III Relevant for Kilonovae Modelling, *Atoms* 10, 1, 2022, (**11 citations**)
16. PEREGO, A., VESCOVI, D., FIORE, A., CHIESA, L., VOGL, C., (+5 ADDITIONAL AUTHORS), **FLÖRS**, A. ET AL. Production of Very Light Elements and Strontium in the Early Ejecta of Neutron Star Mergers, *ApJ* 925, 1, 2022, arXiv:2009.08988, (**61 citations**)
17. BARNA, B., PEREIRA, T., TAUBENBERGER, S., MAGEE, M., KROMER, M., KERZENDORF, W. E., VOGL, C., WILLIAMSON, M. E., **FLÖRS**, A. ET AL. ASASSN-14lp: two possible solutions for the observed ultraviolet suppression, *MNRAS* 506, 1, 2021, arXiv:2106.09053 (**4 citations**)
18. O'BRIEN, J. T., KERZENDORF, W. E., FULLARD, A., WILLIAMSON, M. E., PAKMOR, R., BUCHNER, J., HACHINGER, S., VOGL, C., GILLANDERS, J. H., **FLÖRS**, A. ET AL. Probabilistic Reconstruction of Type Ia Supernova SN 2002bo, *ApJL* 916, 2, L14, 2021, arXiv:2105.07910 (**11 citations**)
19. PRENTICE, S. J., MAGUIRE, K., **FLÖRS**, A. ET AL. The rise and fall of an extraordinary Ca-rich transient – The discovery of ATLAS19dqr/SN 2019bkc, *A&A* 635, A186, 2020, arXiv:1909.05567 (**26 citations**)
20. MCBRIEN, O., SMARTT, S. J., CHEN, T.-W., INSERRA, C., GILLANDERS, J. H., SIM, S. A., (+6 ADDITIONAL AUTHORS), **FLÖRS**, A. ET AL. SN2018kzr: a rapidly declining transient from the destruction of a white dwarf, *ApJL* 885, L23, 2019, arXiv:1909.04545 (**35 citations**)
21. DE CIA, A., GAL-YAM, A., RUBIN, A., LELOUDAS, G., VREESWIJK, P., PERLEY, D. A., QUIMBY, R., YAN, L., SULLIVAN, M., **FLÖRS**, A. ET AL. Light curves of hydrogen-poor Superluminous Supernovae from the Palomar Transient Factory, *ApJ* 860, 100, 2018, arXiv:1708.01623 (**139 citations**)

COLLABORATION PUBLICATIONS

22. VOGL, C., TAUBENBERGER, S., CSÖRNYEI, G., LEIBUNDGUT, B., KERZENDORF, W. E., SIM, S. A., BLONDIN, S., **FLÖRS**, A. ET AL. No rungs attached: A distance-ladder free determination of the Hubble constant through type II supernova spectral modelling, *arXiv e-prints* (2024), arXiv:2411.04968, submitted to A&A (**4 citations**)
23. KWOK, L. A., SIEBERT, M. R., JOHANSSON, J., JHA, S. W., BLONDIN, S., DESSART, L., (+22 ADDITIONAL AUTHORS), **FLÖRS**, A. ET AL. Ground-based and JWST Observations of SN 2022pul. II. Evidence from Nebular Spectroscopy for a Violent Merger in a Peculiar Type Ia Supernova, *ApJ* 966, 1, 2024, arXiv:2308.12450, (**15 citations**)
24. SIEBERT, M. R., KWOK, L. A., JOHANSSON, J., JHA, S. W., BLONDIN, S., DESSART, L., (+22 ADDITIONAL AUTHORS), **FLÖRS**, A. ET AL. Ground-based and JWST Observations of SN 2022pul. I. Unusual Signatures of Carbon, Oxygen, and Circumstellar Interaction in a Peculiar Type Ia Supernova, *ApJ* 960, 1, 2024, arXiv:2308.12449, (**19 citations**)
25. AGUDO, I., AMATI, L., AN, T., BAUER, F. E., BENETTI, S., BERNARDINI, M. G., (+20 ADDITIONAL AUTHORS), **FLÖRS**, A. ET AL. Panning for gold, but finding helium: Discovery of the ultra-stripped supernova SN 2019wxt from gravitational-wave follow-up observations, *A&A* 675, A201, 2023, arXiv:2208.09000, (**8 citations**)
26. CSÖRNYEI, G., VOGL, C., TAUBENBERGER, S., **FLÖRS**, A. ET AL. Consistency of Type IIP supernova sibling distances , *A&A* 672, A129, 2023, arXiv:2302.03112, (**6 citations**)

- 27. BLONDIN, S., BLINNIKOV, S., CALLAN, F. P., COLLINS, C. E., DESSART, L., EVEN, W., **FLÖRS**, A. ET AL. StaNdaRT: a repository of standardised test models and outputs for supernova radiative transfer, *A&A* 668, A163, 2023, arXiv:2209.11671, (**17 citations**)
- 28. PASTORELLO, A., CHEN, T.-W., CAI, Y.-Z., MORALES-GAROFFOLO, A., CANO, Z., MASON, E., (+12 ADDITIONAL AUTHORS), **FLÖRS**, A. ET AL. The evolution of luminous red nova AT 2017jfs in NGC 4470, *A&A* 625, L8, 2019, arXiv:1906.00811, (**28 citations**)
- 29. ABBOT ET AL., Multi-messenger Observations of a Binary Neutron Star Merger, *ApJL* 848, L12, 2017, arXiv:1710.05833, (**3490 citations**)
- 30. SMARTT, S. J., CHEN, T.-W., JERKSTRAND, A., ET AL. A kilonova as the electromagnetic counterpart to a gravitational-wave source, *Nature* 551, 75, 2017, arXiv:1710.05841, (**714 citations**)

SOFTWARE RELEASE PUBLICATIONS

- 31. KERZENDORF, W., SIM, S. A., VOGL, C., WILLIAMSON, M., PÁSSARO, E., **FLÖRS**, A., ET AL. tardis-sn/tardis-release-2024.10.14, Zenodo, 2024, (**15 citations**)
- 32. PROCHASKA, J. X., HENNAWI, J., COOKE, R., (+21 ADDITIONAL AUTHORS), **FLÖRS**, A., ET AL. pypeit/PypeIt: Version 1.14.0, Zenodo, 2023, (**26 citations**)

I have been invited to give 5 talks at conferences and 3 talks at workshops. I led several sessions at both national and international conferences and workshops. My abstract submissions to conferences are regularly accepted and I have given 29 contributed presentations since 2017.

CONFERENCE CONTRIBUTIONS

Conference contributions: **5 invited talks**, **10 contributed talks** and **6 poster presentations**.

- 06/2025 **Nuclei in the Cosmos XVIII**, Girona, Spain, **invited review talk**: *"Atomic and Nuclear Inputs for Nuclear Astrophysics"*
- 03/2025 **DPG-Spring Meeting 2025**, Cologne, Germany, **contributed group talk**: *"Nebular Emission Lines from Lanthanides"*
- 12/2024 **MU Days 2024**, Hamburg, Germany, contributed talk: *"Radiative Transfer Modelling of Kilonova"*
- 09/2024 **Nuclear Physics in Astrophysics XI**, Dresden, Germany, poster contribution: *"Fully Calibrated Lanthanide Atomic Data for Kilonova Modeling"*
- 09/2024 **The 17th International Symposium on Origin of Matter and Evolution of Galaxies**, Chengdu, China, contributed talk: *"Atomic Data and 3D Radiative Transfer Modelling of Kilonovae"*
- 05/2024 **Helmholtz Strategic Advisory Board Meeting Matter & Universe**, Dresden, Germany, poster contribution: *"Connecting Astronomical Observations with the Laboratory"*
- 05/2024 **HeavyMetal Meeting Paralia**, Paralia, Greece, contributed talk: *"Calibrated Lanthanide Opacities for LTE Kilonova Modelling"*
- 04/2024 **2024 Annual Conference of ELEMENTS**, Frankfurt, Germany, poster contribution: *"Atomic Structure Calculations of r-Process Nuclei"*
- 03/2024 **DPG-Spring Meeting 2024**, Gießen, Germany, **contributed group talk**: *"Fully calibrated lanthanide atomic data for 3D kilonova modeling"*
- 12/2023 **MANASLU Meeting**, Mons, Belgium, **invited talk**: *"Atomic Data Requirements for Kilonova Modelling and non-LTE radiative transfer"*
- 11/2023 **KHuK Annual Meeting**, Bad Honnef, Germany, **invited talk**: *"The State of Kilonova Modeling in Germany"*
- 09/2023 **Nuclei in the Cosmos XVII**, Daejeong, South Korea, poster presentation: *"Calibrated Lanthanide Opacities"*
- 09/2023 **The Radiative Transfer and Atomic Physics of Kilonovae**, Stockholm, Sweden, contributed talk: *"Towards a complete and calibrated set of lanthanide atomic data"*
- 02/2023 **3rd ENGRAVE Meeting**, MPA Garching, Germany, contributed talk: *"Lanthanide Atomic Structure for Kilonova Modeling during LIGO/Virgo Period O4"*
- 11/2022 **Kilonova: Multimessenger and Multiphysics**, Bad Honnef, Germany, **invited talk**: *"3D Radiative Transfer Kilonova Modeling with Detailed Nuclear and Atomic Inputs"*
- 11/2022 **Kilonova: Multimessenger and Multiphysics**, Bad Honnef, Germany, poster presentation: *"Advances towards the atomic structure of lanthanide ions"*
- 04/2022 **First Annual Conference of ELEMENTS**, Frankfurt, Germany, contributed talk: *"Lanthanide Atomic Data and Their Application in Kilonova Radiative Transfer"*

- 03/2022 **DPG-Spring Meeting 2022**, Mainz, Germany, **invited talk**: *"Kilonova Radiative Transfer and Atomic Structure of the Heaviest Elements"*
- 09/2019 **The Extragalactic Explosive Universe**, ESO Garching, Germany, contributed talk: *"Sub-Chandrasekhar mass progenitors favoured for SNe Ia: Evidence from late-time spectroscopy"*
- 04/2019 **STScI Spring Symposium**, Space Telescope Science Institute, Baltimore, USA, contributed talk: *"Constraints on the progenitors of normal SNe Ia from nebular phase spectroscopy"*
- 01/2018 **From Simulations to Observations and Nucleosynthetic Fingerprints**, Bad Honnef, Germany, poster contribution: *"Limits on stable iron in type Ia SNe from late-time IR spectroscopy"*

WORKSHOP CONTRIBUTIONS

Workshop contributions: **3 invited talks** and **13 contributed talks**.

- 01/2025 **Hirscheegg Workshop 2025 - Nucleosynthesis of Heavy Elements: r-Process**, Hirscheegg, Austria, **invited workshop contribution**: *"non-LTE Radiative Transfer Modelling of Kilonovae"*
- 12/2024 **XVIII Heidelberg Winter Workshop on Supernovae**, Heidelberg, Germany, workshop contribution: *"Calibrated Permitted and Forbidden Lanthanide Opacities"*
- 12/2023 **XVII Heidelberg Winter Workshop on Supernovae**, Heidelberg, Germany, workshop contribution: *"Calibrated Lanthanide Opacities"*
- 07/2023 **IReNA Workshop on Weak Interactions in Nuclear Astrophysics**, Michigan State University, USA, workshop contribution: *"Atomic Structure Calculations of Neodymium and Uranium for Kilonova Emission Modeling"*
- 12/2022 **XVI Heidelberg Winter Workshop on Supernovae**, Heidelberg, Germany, workshop contribution: *"Atomic Structure Calculations for Kilonova Radiative Transfer"*
- 06/2022 **NBIA Workshop on Radiation Transfer in Astrophysics**, Copenhagen, Denmark, workshop contribution: *"Kilonovae: Signatures of Heavy r-Process Nucleosynthesis"*
- 05/2022 **FAIR Next Generation Scientists - 7th Edition Workshop**, Paralia, Greece, workshop contribution: *"Atomic Data for Heavy r-Process Nucleosynthesis"*
- 11/2021 **XXth Workshop on Nuclear Astrophysics**, Ringberg, Germany, workshop contribution: *"Atomic Data Requirements for Kilonova Radiative Transfer"*
- 12/2019 **XV Heidelberg Winter Workshop on Supernovae**, Heidelberg, Germany, workshop contribution: *"Peculiar Distributions of Iron in SNe Ia"*
- 08/2019 **Second Radiative Transfer Workshop**, Max-Planck Institute für Astrophysik, Garching, Germany, **invited workshop contribution**: *"Bayesian inference of the progenitor systems of SNe Ia"*
- 03/2019 **XIXth Workshop on Nuclear Astrophysics**, Ringberg, Germany, workshop contribution: *"The evolution of temperature and density in the iron-rich ejecta of SNe Ia in the nebular phase"*
- 12/2018 **XIV Heidelberg Winter Workshop on Supernovae**, Heidelberg, Germany, workshop contribution: *"The origin of iron in SNe Ia: stable nickel"*

- 06/2018 **First Radiative Transfer Workshop**, Weizmann Institute of Science, Israel, **invited workshop contribution**: *"The one-zone model and its application to nebular modelling of type Ia SNe"*
- 12/2017 **XIII Heidelberg Winter Workshop on Supernovae**, Heidelberg, Germany, workshop contribution: *"Bayesian modelling of nebular phase observations of SNe Ia"*
- 12/2016 **XII Würzburg Winter Workshop on Supernovae**, Würzburg, Germany, workshop contribution: *"Evolution of line shifts and widths in SN Ia nebular spectra"*
- 03/2016 **XIIXth Workshop on Nuclear Astrophysics**, Ringberg, Germany, workshop contribution: *"Modelling of optical nebular phase spectra of SNe Ia"*

SEMINAR / COLLOQUIA CONTRIBUTIONS

Seminar/Colloquia contributions: **6 invited talks** and **6 contributed talks**.

- 10/2024 **Google Summer of Code Mentor Summit**, Mountain View, USA, **invited talk**: *"Transient Modelling with the Radiative Transfer Code TARDIS"*
- 02/2023 **Institute Seminar**, Max-Planck Institute für Astrophysik, Garching, Germany, seminar talk: *"Towards non-LTE modelling of Kilonovae"*
- 07/2022 **Western Michigan University Theory Seminar**, Western Michigan University, USA, **invited talk**: *"FAC calculations of lanthanide ions using an optimised local central potential"*
- 10/2020 **Informal Discussion**, ESO Garching, Germany, seminar talk: *"How to model a supernova"*
- 01/2020 **Institute Seminar**, Max-Planck Institute für Astrophysik, Garching, Germany, seminar talk: *"Constraining SN Ia explosion models from nebular phase spectroscopy"*
- 10/2019 **Supernova Meeting**, ESO Garching, Germany, seminar talk: *"Observational evidence for high neutronization in supernova remnants: implications for type Ia supernova progenitors"*
- 04/2019 **Stars & Exoplanets Meeting**, Flatiron Center for Computational Astrophysics, USA, **invited seminar talk**: *"Developing a likelihood function for supernova modelling"*
- 04/2019 **Transient Meeting**, Center for Cosmology and Particle Physics NYU, USA, **invited seminar talk**: *"SNe Ia - a one-parameter family of explosions"*
- 02/2019 **Queen's University Belfast Astronomy Colloquium**, Belfast, UK, **invited talk**: *"Constraining SN Ia explosion models from nebular phase spectroscopy"*
- 09/2018 **Supernova Meeting**, ESO Garching, Germany, seminar talk: *"Using late-time optical and near-infrared spectra to constrain Type Ia supernova explosion properties"*
- 10/2017 **Queen's University Belfast Astronomy Colloquium**, Belfast, UK, **invited talk**: *"Nebular Infrared Spectroscopy of Type Ia SNe"*
- 06/2017 **Supernova Meeting**, ESO Garching, Germany, seminar talk: *"Supersymmetric model for triggering supernova Ia in isolated white dwarfs"*