

**Dr. Katharina A. Lutz**

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**Research Interests**

galaxy evolution - interstellar medium of galaxies – star formation – galaxy kinematics  
 data discovery and analysis – multiwavelength astronomy

**Previous Positions & Research Experience**

- 2018 - ongoing Post-Doc, Centre de Données de Strasbourg (CDS), Strasbourg (France)
- Research on the interstellar medium of nearby galaxies, remote member of the ISM\*@ST group (based at STScI) (50%)
  - Dissemination of Virtual Observatory (VO) and CDS services, liaising between the CDS and the astronomical community (50%)
- 01/14 - 03/18 PhD (Astrophysics)  
 Swinburne University of Technology, Melbourne (Australia)  
 “The HIX galaxy survey - How HI eXtreme galaxies maintain their HI reservoir”  
 supervisors: V. A. Kilborn and B. Catinella
- 09/11 - 10/13 MSc (Nuclear-, Particle- and Astrophysics)  
 Technical University of Munich, Munich (GER)
- 09/08 - 08/11 BSc (Physics)  
 Technical University of Munich, Munich (GER)

**Skills & Tools**

- Coding Python: Regular usage of Jupyter, Astropy and Astropy affiliated packages, pandas, scikit-learn, and Keras with Tensorflow
- Data
- Experienced with the analysis of imaging, cube and spectral data at wavelength ranges between the radio and ultraviolet, using Python, IRAF, Miriad and CASA.
  - Member of MIGHTEE-HI and MALS collaborations, (both MeerKAT Large Survey Projects) and WALLABY team (ASKAP Large Survey)
  - Experienced in finding and accessing image and tabular data, using VO standards with Aladin, Topcat, and Python
- Languages German (native), English (C2), French (B1), Spanish (A1)

### Telescope Proposals and Observations

- 2020 NIKA2 in IRAM 30m single dish, Pico Veleda, (ESP)  
 – Principal Investigator of a project mapping the cold dust and free-free emission in NGC4214 (30h, observations queued)
- 2019 - 2020 ALMA-ACA array, Chajnantor, (CHL)  
 – Principal Investigator of a project mapping the molecular gas of local galaxies with the ALMA-ACA array (14h granted)
- 2014 – ongoing Australian Telescope Compact Array (ATCA), Narrabri, (AUS)  
 – Co-Investigator of multiple projects mapping the HI content of local galaxies, observing with the ATCA for more than 300h  
 – Supporting continuum and spectral line observations as the Duty Astronomer
- 2014 - 2016 WiFeS IFU, 2.3m ANU telescope, Siding Spring Observatory, (AUS)  
 – Principal Investigator of a project mapping the gas-phase metallicity of local galaxies (18 nights granted)
- 2016 DECam, CTIO Victor-Blanco 4m Telescope, Cerro Tololo, (CHL)  
 – Principal Investigator of a project for deep imaging of local galaxies and their environment (2 nights granted)
- 2013 EMIR on IRAM 30m single dish, Pico Veleda, (ESP)  
 – 60h of observations of the CO(1-0) and CO(2-1) emission line spectra in local galaxies for the xCOLDGASS project
- 2013 EFOSC2 on ESO New Technology Telescope (NTT), La Silla, (CHL)  
 – 5 nights of observations of optical longslit spectra of local galaxies for the xGASS/ xCOLDGASS projects

### Teaching & Educating

- since 2018 develop further and update [Virtual Observatory tutorials](#)
- 03 - 07/20 supervision of webdesign student to update the [euro-vo.org](http://euro-vo.org) webpage (technical implementation ongoing)
- 03 - 07/20 co-supervision of the Master Student: final year project to investigate the diffuse cold dust emission in SMC and LMC
- 04 - 05/19 co-supervision of Bachelor Student: internship to create a sample of galaxies, which have suitable data to study their cold dust emission
- 11/2018 tutoring at [4th Asterics Virtual Observatory School](#): giving talks & hands-on tutorials and discussing individual projects with attendees (mostly early career astronomers)

## Service and Engagement

### Organisation of Conferences & Schools

- 2021 Member of SOC: “AstroSpin: The origin and build-up of angular momentum in stellar systems” (pending, planned in Strasbourg, FRA)
- 2020 Member of SOC: CDS Lunch session at the 2020 EAS annual meeting (virtual/ Leiden, NLD)
- 2018 Co-organiser, Member of LOC & SOC: 4<sup>th</sup> Asterics Virtual Observatory School (Strasbourg, FRA)

#### Member of LOCs:

- “Towards a panchromatic understanding of the polarization of Active Galactic Nuclei” (2020, virtual/ Strasbourg, FRA)
- “Rise and shine: galaxies in the epoch of reionization” (2018, Strasbourg, FRA)
- “The role of Hydrogen in the evolution of galaxies” (2014, Kuching, MYS)
- “Deutsche Physikerinnen Tagung 2010” (2010, Munich, GER)

### Organisation of Seminar Series

- 2018 - 2019 Chair of organising committee for the Astro-Lunch talk series at the Observatoire astronomique de Strasbourg
- 2015 - 2016 Co-organiser of Graduate Physics Student seminar at Swinburne University

### Community Work

- Since 2018 Referee for Monthly Notices of the Royal astronomical Society (MNRAS)
- 2015 - 2016 Equity and Diversity committee, Centre for Astrophysics and Supercomputing, Swinburne University (Student Member)
- 2016 Australian Telescope User Committee (ATUC, Student Member)

## Professional References

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