

Dr. Katharina A. Lutz

research@katha-lutz.de
www.katha-lutz.de

Research Interests

galaxy evolution - interstellar medium of galaxies - star formation - galaxy kinematics
data discovery and analysis in the era of big data astronomy - science platforms

Current Position

- 2018 - ongoing Post-Doc, Centre de Données de Strasbourg (CDS), Strasbourg (France)
- Dissemination of Virtual Observatory (VO) and CDS services as the Asterics post-doc (Horizon2020 project) and as the CDS post-doc
 - Research on the interstellar medium of near-by galaxies, remote member of the ISM@ST group (based at STScI)

Data handling and software skills

- Tools & Services
- Provided tutorials on usage of Virtual Observatory tools and services (finding and accessing image and tabular data, using VO standards with Aladin, Topcat, and Python)
 - First experiences with machine learning algorithms
 - Experience with high performance computing
- Coding Python
- Member of Astropy collaboration (contributing to tutorials)
 - Regular usage of Jupyter, Astropy and Astropy affiliated packages
 - Familiar with pandas, scikit-learn
- Data
- Experienced with the analysis of imaging, cube and spectral data at wavelength ranges between the radio and ultraviolet.
 - Member of MIGHTEE-HI collaboration, a MeerKAT Large Survey Project

Education

- 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 (Germany)
Thesis: “Accretion and stellar mass growth in low mass galaxies”
supervisors: F. Eisenhauer, A. Saintonge, L. Tacconi (MPE)
- 09/08 - 08/11 BSc (Physics)
Technical University of Munich, Munich (Germany)
Thesis: “Astrometry and Photometry of M 31 Observations with Small Telescopes”
supervisors: J. Greiner, W. Pietsch, M. Henze (MPE)
- 06/08 Abitur, Alexander-von-Humboldt Gymnasium, Schweinfurt (Germany)

Service and Engagement

Organisation of Conferences & Schools

- 2019 - 2020 CDS Lunch session at the 2020 EAS annual meeting in Leiden (SOC)
- 2018 4th ASTERICS Virtual Observatory School (Co-organiser, LOC & SOC)
- 2018 “Rise and shine: galaxies in the epoch of reionization” (LOC)
- 2014 “The role of Hydrogen in the evolution of galaxies” (LOC)
- 2010 “Deutsche Physikerinnen Tagung 2010” (LOC)

Organisation of Seminar Series

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

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)

Conference Contributions and Talks

Contributed Talks

- 10/19 “How to write a paper in a Jupyter notebook” at .Astronomy, Toronto (CAN)
- 07/19 “The HI content of nearby galaxies” at Nine billion years of neutral gas evolution/MIAPP, Garching (GER)
- 06/19 “How dynamics determine the HI content of galaxies” at EWASS, Lyon (FRA)
- 07/16 “The HIX Galaxy Survey: The most HI rich Galaxies in the Southern Hemisphere” at Discs in Galaxies, ESO, Garching (GER)
- 07/16 “The HIX Galaxy Survey: The most HI rich Galaxies in the Southern Hemisphere” at Astronomical Society of Australia annual scientific meeting, University of Sydney, Sydney, (AUS)
- 06/15 “How galaxies accrete gas and form stars - the HIX galaxy survey” at Many pathways to galaxy growth, Monash University, Prato, (ITA)
- 05/15 “How galaxies accrete gas and form stars - the HIX galaxy survey” at Multiwavelength dissection of galaxies, Australian Astronomical Observatory and the CSIRO Astronomy and Space Science, Coogee Beach, (AUS)
- 11/14 “Dissecting the GRUS quartet” at The periphery of discs, CSIRO Astronomy and Space Science, Sydney, (AUS)

Selected Contributed Posters

- 11/18 “VO for everyone - Getting ready for the 4th ASTERICS DADI VO school” at ADASS 2018, University of Maryland (USA)
- 08/18 “The HIX survey” and “xGASS/xCOLDGASS - metallicity gradients in nearby galaxies” at IAU General Assembly 2018, Vienna (AUT)

09/14 “The HIX galaxy survey” at The role of Hydrogen in the evolution of galaxies, Swinburne University of Technology, Kuching, (MYS)

Awards and Scholarships

2014 - 2017 “SUPRA PhD scholarship” from Swinburne University (AU\$ 75000)
 2014 - 2017 “OCE Science leader PhD top-up scholarship” from CSIRO Astronomy and Space Science / Australian Telescope National Facility (AU\$ 51000)
 July 2016 Best Student Talk (runner up) at the Astronomical Society of Australia annual scientific meeting 2016
 July 2014 Attendance scholarship for Astronomical Society of Australia annual scientific meeting 2014 (AU\$ 250)

Telescope Proposals and Observations

2014 - present Australian Telescope Compact Array (ATCA), Narrabri, (AUS)
 • Co-Investigator of two projects mapping the HI content of local galaxies
 • Observing with the ATCA for more than 300h
 • Supporting continuum and spectral line observations at wavelengths of 16cm, 4cm, 15mm, 7mm and 4mm 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)
 • 16 Nights of observations of optical IF spectra of local galaxies.
 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 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 spectrograph 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

Outreach and Education

2016 - 2017 3D AstroTour guide: presenting 3D films and animations to school classes
 06/16 Co-supervision of work experience students
 02/16 Talk at Astronomical Society of Victoria (ASV) Diurnals, a yearly meeting of local amateur astronomers