

Curriculum Vitae

Personal information

Küffmeier, Michael

ORCID: 0000-0002-6338-3577

Date of birth: 27/01/1988

E-Mail: mkueffmeier@mpe.mpg.de

URL for website: www.kuffmeier.com

• Education

2017 PhD in astrophysics; Title: '*Accretion processes in star formation*', Niels Bohr Institute (NBI), University of Copenhagen, **Supervisor:** Prof. Åke Nordlund (obtained: 10/2017)

2014 Master of Science in Physics, NBI, University of Copenhagen, Denmark

• Current and previous academic employment

2020 – 2023 Marie Skłodowska-Curie Global Fellow at University of Virginia in Charlottesville (UVa), USA, and Max-Planck-Institute for Extraterrestrial Physics (MPE), Munich-Garching, Germany including a 6-month secondment period at NBI (10/2020 – 03/2021)

2018 – 2020 Postdoctoral fellow at Institute for Theoretical Astrophysics (ITA), Heidelberg University, Germany (*until June 2018* as postdoc for Research Unit Transition Disk under Co-I Prof. Dullemond; **since July 2018 as independent postdoc financed by own grant**)

2017 Research assistant at NBI, Copenhagen, Denmark, after submission of PhD

• Fellowships and Awards

2023 – 2025 Carlsberg Reintegration Fellowship at University of Copenhagen, DK

2020 – 2023 **Marie Skłodowska-Curie Global Fellowship** at UVa and MPE, USA/Germany (score: **96.80 %**; [top grade of section GF-PHY of 2019 initiative](#))

Since 2020 Declined offers: VICO Fellowship at UVa, USA; CITA National Fellowship, Canada; CAS fellowship at MPE Garching, Germany; National IAF fellowship in Florence, Italy

2018 – 2020 **DFF-International Postdoctoral Grant** of Independent Research Fund Denmark (DFF)

2018 Award for **best PhD thesis in Danish Astronomy** of the year 2017

• Computing allocation

2022 Co-I PRACE (40M core-hours; PI: Johansen) & EuroHPC (24M core-hours; PI: Haugbølle)

2016 Co-I PRACE (22M core-hours; PI: Haugbølle)

• Management experience

Since 2017 **Management of own research projects and grants since year 1 after obtaining my PhD**

2021 Co-organizer of virtual EAS session '*Streamers: thinking outside the planet-forming disk*'

2021 Session chair of 'Origins of cores and IMF' at virtual winter meeting of AAS

2015 Local organizer for off-lecture activities of '*Summer School on Protoplanetary Disks and Planet Formation*' at Niels Bohr International Academy, Denmark

• Reviewing Activities

2019 – Reviewer for AAS journals (including ApJ), A&A, MNRAS & Nature Astronomy

- **Brief description of research activity and major achievements**

Star and planet formation, magnetohydrodynamics (MHD):

I carried out state-of-the-art 3D magnetohydrodynamical zoom-in simulations with the RAMSES code (FORTRAN) of protostars in which I demonstrated that the star formation process is heterogeneous in space and in time. The simulations predicted the presence of so-called streamers, which recently have been observed with modern telescopes. I have contributed to the development of the DISPATCH (FORTRAN) code framework, foremost on implementing a non-ideal MHD module. I investigated the effect of infall in hydrodynamical simulations with the AREPO code (C) and put constraints on dust polarization as a tracer of magnetic fields using the POLARIS code (C).

- **International Collaborations**

Collaborations in Europe, USA, Japan; involving 2 pending applications for ALMA Large Programs **in Germany:** Munich (Caselli, Pineda, Miotello), Heidelberg (Dullemond, Reißl); **in Europe:** Copenhagen (Haugbølle, Nordlund), France (Benisty, Winter); **in the US:** Huang (Michigan), Segura-Cox (Texas), Virginia (Li); **in Japan:** (Yang, Nomura).

- **Supervision and mentoring**

- 2022 – Committee member and co-supervisor of PhD students Aashish Gupta (supervisor: Miotello) and Farideh S. Tabatabaei Mazraeh No (supervisors: Caselli & Redaelli)
- 2022 Supervisor of students Temidayo Akinbi and Louis Seyfritz at UVa (12 weeks)
- 2021 – Mentor of PhD students Harshita Bhat (Max-Planck-Institute for Radioastronomy Bonn), Svenja Wild (University of Cologne) and Simran Kaur (UVa)
- 2021 – 2022 Supervision of summer project and thesis project of Hannah Woodward at UVa

- **Membership of Scientific Societies**

- 2020 – Member of American Astronomical Society (AAS)
- 2019 – Member of European Astronomical Society (EAS)
- 2007 – 2022 Member of German Physical Society (DPG)

- **Outreach and other Activities**

- 2021 – Mentor of [‘Erste Generation Promotion Mentoring+’](#) for PhD students from non-academic family backgrounds
- 2015 – 2017 Support for high-school students with immigrant backgrounds for Danish Refugee Council in Copenhagen, Denmark
- 2014 – 2016 Writing 23 and editing 24 articles accessible to undergraduates for [‘astrobites.org’](#)

- **Further Research Experience and additional info**

- 2023 Organization with Kuznetsova and Schwarz of workshop on onset of planet formation
- 2021 Invitation to **phase 2 of the ERC StG**
- 2021 – Co-I of 7 accepted ALMA and NOEMA proposals
- 2016 Visiting research group of Prof. Tomida at University of Osaka, Japan, for 3 months
- 2015 Observing at Danish Telescope in LaSilla, Chile (two weeks), and member of MiNDSTEP consortium (Microlensing Network for the Detection of Small Terrestrial Exoplanets)

- **Conferences and Talks**

Conferences, workshops & seminars: > 70 in total; **>30 invited**

Extended list of all *invited* Conferences and Talks

- 07/2023 Speaker at EAS special session 'Formation of planetary systems' Krakow, Poland
- 05/2023 Colloquium speaker at Ludwig-Maximilian University of Munich (LMU), Germany
- 05/2023 Königstuhl colloquium at MPIA Heidelberg, Germany
- 04/2023 Seminars at Sendai University, RIKEN Tokyo and TokyoTech, Japan
- 03/2022 Speaker at Starplan retreat in Vålådalen, Sweden
- 02/2023 Seminar speaker at star formation department in Paris-Saclay, France
- 12/2022 Speaker at Heidelberg-Harvard meeting in Heidelberg, Germany
- 11/2022 Speaker at 'Cosmic Rays2: the salt in the star formation recipe' in Florence, Italy
- 09/2022 Seminar on 'Disk formation around low-mass stars' University of Florida, USA
- 02/2022 ORIGINS seminar at Chalmers University in Gothenburg, Sweden
- 10/2021 Speaker at 'Gaps, rings, spirals, and vortices' at MIAPP in Munich
- 04/2021 Webinar at Anton Pannekoek Institute for Astronomy in Amsterdam
- 02/2021 Webinar at Center for Star and Planet Formation (Starplan) Copenhagen, Denmark
- 12/2020 Speaker at e-workshop 'Accretion and luminosity bursts across the stellar mass spectrum' organized by U. of Vienna, South. Fed. U. Moscow and ASIAA Taipei
- 05/2020 Webinar at European Southern Observatory (ESO) in Garching
- 02/2020 Speaker at retreat in Bormio, Italy, of DFG research unit transition disk
- 09/2019 Königstuhl colloquium at MPIA Heidelberg, Germany
- 06/2019 NORDITA program 'Zoom-In and Out: From the Interstellar Medium to the Large Scale Structures of the Universe' in Stockholm, Sweden
- 05/2019 Seminar at NRAO Virginia, USA
- 02/2019 Seminar at ICREA Barcelona, Spain
- 09/2018 Invited visit at University of Leicester, UK
- 05/2018 Invited as laureate at Danish Astronomy Meeting in Faaborg, Denmark
- 06/2017 Speaker to MIAPP-program 'Protoplanetary Disks and Planet Formation and Evolution' in Munich, Germany
- 01/2017 Seminar in Kiel, Germany
- 09/2016 Speaker at Japan-Germany Workshop on protopl. disks on Ishigaki island, Japan
- 05/2016 Seminar at at Osaka University
- 04/2016 Seminar at at Tokyo Tech University
- 04/2016 Seminar at at Nagoya University
- 04/2016 Seminar at at Kyushu University
- 02/2016 Astrochemistry Seminar in Leiden, Netherlands

May 10, 2023

