

Evert Nasedkin

Curriculum Vitae

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Nationality - Canadian

Research Interests

Exoplanet Atmospheres, Habitability, Planet Formation, Spectroscopy, High-Contrast Imaging, Astronomical Instrumentation.

Education

- Current **PhD Candidate**, *IMPRS-HD*, Max Planck Institute for Astronomy, Heidelberg, DE.
◦ "Exploring the Diversity of Extrasolar Planets". *Sup. Laura Kreidberg and Paul Mollière.*
- 2018–2020 **Masters of Science in Physics**, *ETH Zürich*.
◦ Master's Thesis: "Sub-Stellar Atmospheres in the Mid-Infrared". *Sup. Sascha Quanz.*
◦ Semester Project: "Processing JUPITER Hydrodynamics Simulation Data for Visualisation in Paraview." *Sup. Judit Szulágyi.*
- 2013–2018 **Bachelors of Science, Honours Co-Operative Physics**, *University of Waterloo*.
◦ Bachelor's Thesis: "Characterising Filamentary Structure in Planck Galactic Cold Clumps with the SCOPE dataset". *Sup. Michel Fich*
◦ Specialisation in Astrophysics
- 2010–2013 **International Baccalaureate Diploma**, *Grande Prairie Composite High School*.
◦ Honours with Distinction

Publications

- Patapis, P., Nasedkin, E., Cugno, G., et al. submitted "*Direct Emission Spectroscopy of Exoplanets with the Medium Resolution Imaging Spectrometer on board JWST MIRI*"
- Lacour, S., Wang, J. J., Rodet, L., et al. (2021) "*The mass of Beta Pictoris c from Beta Pictoris b orbital motion*" eprint arXiv:2109.10671
- Cugno, G., Patapis, P., Stolker, T., et al. "*Molecular mapping of the PDS70 system. No molecular absorption signatures from the forming planet PDS70 b*" *A&A* 653 A12. arXiv:2106.03615
- Kammerer, J., Lacour, S., Stolker, T., et al. (2021) "*GRAVITY K-band spectroscopy of HD 206893 B. Brown dwarf or exoplanet*" *A&A* 652 A57. arXiv:2106.08249
- Wang, J. J., Vigan, A., Lacour, S., et al. (2021) "*Constraining the Nature of the PDS 70 Protoplanets with VLTI/GRAVITY*" *AJ* 161 3 148. arXiv:2101.04187
- Cantalloube, F., Gomez-Gonzalez, C., Absil, O., et al. (2020) "*Exoplanet Imaging Data Challenge: benchmarking the various image processing methods for exoplanet detection*" *SPIE* 11448 id 114485A. arXiv:2101.05080
- Lacour, S., Wang, J. J., Nowak, M., et al. (2020) "*The ExoGRAVITY project: using single mode interferometry to characterize exoplanets*" *SPIE* 11446 id 114460O. arXiv:2101.07098
- Nowak, M., Lacour, S., Lagrange, A.-M., et al. (2020) "*Direct confirmation of the radial-velocity planet β Pictoris c*" *A&A* 642 L2. arXiv:2010.04442
- Mollière, P., Stolker, T., Lacour, S., et al. (2020) "*Retrieving scattering clouds and disequilibrium chemistry in the atmosphere of HR 8799e*" *A&A* 640 A131. arXiv:2010.04442

Liu, T., Li, P. S., Juvela, M. et al. (2018) "A holistic perspective on the dynamics of G035.39-00.33: the interplay between gas and magnetic fields." *ApJ*, 859, 2. arXiv:1803.09457

Reports

Nasedkin, E. (2020). "Sub-Stellar Atmospheres in the Mid-Infrared." (Master's Thesis). ETH Zürich, Zürich, CH.

Nasedkin, E. (2019). "Processing JUPITER hydrodynamics simulation data for visualisation in Paraview." (Semesterarbeit). ETH Zürich, Zürich, CH.

Nasedkin, E. (2018). "Characterising filamentary structure in Planck Galactic Cold Clumps with the SCOPE dataset." (Bachelor's thesis). University of Waterloo, Waterloo, ON.

Nasedkin, E. (2017) "Characterisation of a cryogenic stepper motor for ERIS." (Work Report). Zürich, CH.

Nasedkin, E. (2016). "Developing a xenon electroluminescent source for the nEXO collaboration" (Work Report). Montréal, QC.

Nasedkin, E. "Afterpulsing in Photomultiplier Tubes for DEAP-3600"(Work Report). Sudbury, ON.

Acknowledged

DEAP Collaboration. (2017). In-situ characterization methods for the Hamamatsu R5912 photomultiplier tubes used in the DEAP-3600 experiment. *Journal of Instrumentation*. arXiv: 1705.10183

Conferences and Workshops

- 09 2021 *European Planetary Science Conference*. Virtual
 - Contributed talk: Four-of-a-Kind: HR8799 - Exploring the atmospheres of the HR8799 system with VLT/GRAVITY
- 08 2021 *Atmospheres, Atmospheres! Do I look like I care about atmospheres?* . Virtual
 - Invited Lecture: petitRADTRANS
 - Contributed talk: Four-of-a-Kind: HR8799 - Exploring the atmospheres of the HR8799 system with VLT/GRAVITY
- 08 2021 *Cloud Nine Con*. Virtual, MPIA, Heidelberg
- 07 2021 *Sagan Workshop: Circumstellar Disks and Young Planets*. Virtual, Caltech, California.
 - Poster: Four-of-a-Kind: HR8799
 - Assisted Young Planet Spectroscopy Hands on Session
- 03 2021 *Exoplanet atmosphere characterization: from HST and Spitzer to JWST*. Virtual
- 09 2020 *Planet Formation in Protoplanetary Disks*. IMPRS-HD Summer School, Heidelberg, DE
- 07 2020 *Exoplanets 3*. Heidelberg, DE
- 02 2020 *Tackling the Complexities of Substellar Objects: From Brown Dwarfs to (exo-)Planets*. Lorentz Centre, Leiden, NL
- 01 2020 *Deep Learning Meets (Astro)physics*. ETH Zürich, Zürich, CH
- 06 2017 *5th EIROForum School on Instrumentation*. EIROForum, Hamburg, DE

Outreach and Service

- Current **Exocoffee Organizer**, APEX Department, MPIA, Heidelberg, DE.
 - Invite and organize speakers for the weekly Exocoffee seminar

Research Experience

- 05-08 2017 **Research Assistant**, *Institute for Astronomy*, ETH Zürich, Zürich, CH.
- Designed and performed experiments characterising cryogenic stepper motor performance for ERIS at the Very Large Telescope
 - Assembled high vacuum cryogenic test facility and analysed cooling performance
 - Developed LabVIEW interface for data acquisition system
- 08-12 2016 **Research Assistant**, *nEXO Collaboration*, McGill University, Montreal, QC.
- Simulated scintillation photon yield in xenon gas
 - Assembled an electroluminescent source used to test and calibrate photodetectors for nEXO
- 2015-2016 **Undergraduate Research Assistant**, *DEAP-3600 Dark Matter Search*, Sudbury, ON.
- Implemented and automated analysis routine for characterising afterpulsing in photomultiplier tubes using CERN's ROOT framework
 - Calibrated muon veto PMTs and implemented data structure for time and charge information
 - Monitored, tested and improved hardware data acquisition systems
- 2014-2016 **Aerodynamics Team Member**, *FSAE Student Design Team*, Waterloo, ON.
- Researched the effects of aerodynamics on vehicle dynamics and set design targets based on simulation

Work Experience

- 2019-2020 **Private Tutor**, Zürich, CH.
- Tutored International Baccalaureate students in physics and mathematics.
- 02-04 2018 **Teaching Assistant**, *University of Waterloo*, Waterloo, ON.
- Organised and led tutorial section for first year physics course
- 2017-2018 **Private Tutor**, Waterloo, ON.
- Tutored students in a variety of physics subjects and levels
- 01-04 2015 **English Second Language Teacher**, *TOBB University of Economics and Technology*, Ankara, TR.
- Planned and instructed lessons on English as a second language

Technical Skills

- Programming** Python, Tensorflow, Fortran, C++, ROOT, LabVIEW, Mathematica, Latex, Linux
- Electronics** Digital and Analogue Circuits, Soldering, Cryogenic wiring
- Hardware** Mechanical Design, Thermal Design, Cryogenic systems