Craig N. Yanitski

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Date of birth: 9 May 1991, **Nationality:** Canadian

Work Experience

2019—present **I. Physikalisches Institut, Universität zu Köln**
Research Assistant / Guest Researcher

Education

Oct 2019—Nov 2023 **I. Physikalisches Institut, Universität zu Köln**
Doctoral Candidate in Astrophyics
Supervisor: Priv.-Doz. Dr. Volker Ossenkopf-Okada
Thesis: *Modelling the Galactic cooling lines using clumpy PDRs*

Sept 2017—July 2019 **Radboud Universiteit Nijmegen**
Master's Degree in Physics and Astronomy with a Specialization in Particle and Astrophysics
Supervisor: Dr. Onno Pols
Thesis: *Tidal interactions in red giant binaries*

Sept 2012—Apr 2017 **University of Alberta**
Bachelor's Degree in Science with Honours in Astrophysics
Supervisor: Dr. Erik Rosolowsky
Thesis: *Disk giant molecular clouds in nearby galaxies*

Conferences / Workshops

2024 Physics of star formation winter school (*in person*)

2022 Physics and chemistry of star formation and dynamical ISM across time and spatial scales (*in person*)

2022 Interstellar shock summer school (*in person*)
— attended Paris-Durham Shock code (PDS) workshop

2021 European Science Cluster of Astronomy & Particle physics ESFRI research infrastructures (*virtual*)
— focus on `python` development in astronomy and astrophysics

2021 Interstellar medium of galaxies (*virtual*)
— attended `Cloudy` workshop (Prof. Dr. Gary Ferland)

2021 ISM 2021 Beirut (*virtual*)
— **presented** *Modelling galaxies with KOSMA-tau-3D: The Milky Way*

2019 (Koninklijke) Netherlandse Astronemclub (*in person*)

Invited talks

2024 University of Alberta *(in-person)*
Modelling the emission from the inhomogeneous ISM: a simulation of fractal PDRs

2024 Harvard-Smithsonian Center for Astrophysics (CfA; *in-person*)
Modelling the emission from the inhomogeneous ISM

2023 Heidelberg Institut für Theoretische Astrophysik (ITA; *in-person*)
Modelling the Galactic cooling lines

Teaching

2020—2022	Data Analysis in Physics and Astronomy *Teaching assistant* — Instructor: PD Dr. Markus Röllig

Volunteer / Outreach

2020-2023	Astronomy on Tap Köln *Founder and coordinator*
2020-2022	SFB Students Council
2021	Astronomy on Tap Köln — **presented** *Gravity throughout time (and space!)*
2019	Koninklijke Nederlandse Vereniging voor Weer- en Sterrenkunde (KNVWS) — **presented** *Asteroseismology: the music of the stars*
2018/2019	Radboud Astrophysics Outreach

Publications

Zhang et al. (2025). *The Astrophysical Journal*, **982**, 21.

Okada, Y. et al. (2024). *Astronomy & Astrophysics*, **690**, A45.

Yanitski, Craig Nicholas (2023). *The Milky Way with kosmatau3d: Modelling the Galactic cooling lines using clumpy PDRs*. PhD thesis, Universität zu Köln.

Yanitski, C. N., Ossenkopf-Okada, V., and Röllig, M. (2023). In *Physics and Chemistry of Star Formation: The Dynamical ISM Across Time and Spatial Scales*. Ed. V. Ossenkopf-Okada, R. Schaaf, I. Breloy, and J. Stutzki (USB Köln). 265.

Yanitski, C. N. `kosmatau3d` [Computer software]. `https://github.com/CraigYanitski/kosmatau3d`.

Computing Programs & Languages

`kosmatau3d` • `Cloudy` • `MESA` • `binary_c` • **`Python`** • `Make` • `C++/C` • `Rust` • `bash` • `Fortran` • `Golang` • `Javascript` • `Assembler` (*if necessary*)

Research / Personal Interests

Astronomical Modelling • Radiative Transfer • Stellar Feedback • Radiation Pressure • Asteroseismology • Galactic Magnetic Field • Fourier Analysis • Number Theory • Music

References

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