

Eric W. Koch

Curriculum Vitæ

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Education

- 2016-Present *University of Alberta*
PhD. (Physics)
Adviser: Erik Rosolowsky
- 2014-2016 *University of Alberta*
MSc. (Physics)
Thesis: "The Atomic Interstellar Medium in M33"
Adviser: Erik Rosolowsky
- 2010-2014 *University of British Columbia*
Hon. BSc. (Physics)

Employment

- 2014-present *University of Alberta*
Graduate Student
- 2011-2013 *University of British Columbia, Okanagan*
Teaching Assistant
- 2013-2014 *University of British Columbia, Okanagan*
Research Assistant

Fellowships and Awards

- 2019 *University of Alberta/The Ohio State University*
NSERC Michael Smith Foreign Study Supplements
- 2017 *University of Alberta*
NSERC Alexander Graham Bell Canada Graduate Scholarship - Doctorate
- 2016 *University of Alberta*
NSERC Post-graduate Graduate Scholarship - Doctorate
- 2015 *University of Alberta*
Queen Elizabeth II MSc Scholarship
- 2010-2014 *University of British Columbia, Okanagan*
Deputy Vice Chancellor Scholarship
- 2014 *University of British Columbia, Okanagan*
Distinguished Graduate Award - Physics, Math, Statistics & Computer Science
- 2014 *University of Alberta*
NSERC Canadian Graduate Scholarship - Masters
- 2013 *University of Alberta*
NSERC USRA
- 2013 *University of British Columbia, Okanagan*
Top Oral Presenter - UBC-O Undergraduate Research Conference
- 2013 *University of British Columbia, Okanagan*
Upper Year Physics Award
- 2012 *University of British Columbia, Okanagan*
NSERC USRA
- 2012 *University of British Columbia, Okanagan*
Second Year Physics Award - Honourable Mention
- 2010 *University of British Columbia, Okanagan*
President's Entrance Scholarship

External Funding

- 2015 **Co-I** - *A centralized database for pan-chromatic nearby galaxy data*
Amazon Web Services & Square Kilometre Array
\$3200 USD (credits)
- 2015 **Co-I** - *Development of an image variability service in the cloud*
Amazon Web Services & Square Kilometre Array
\$14000 USD (credits)
- 2015 **PI** - *Developing a radio cube imaging service in the cloud*
Amazon Web Services & Square Kilometre Array
\$1500 USD (credits)

Publications

Refereed

8. **EW Koch**, EW Rosolowsky, FJ Lockman, AA Kepley, A Leroy, A Schrub, J Braine, J Dalcanton, MC Johnson, S Stanimirović. “Kinematics of the atomic ISM in M33 on 80 pc scales.” 2018, [MNRAS 479 2505-2533](#).
7. RD Boyden, SSR Offner, **EW Koch**, EW Rosolowsky. “Assessing the Impact of Astrochemistry on Molecular Cloud Turbulence Statistics.” 2018, [ApJ 860 157](#).
6. **EW Koch**, CG Ward, S Offner, J Loeppky, E Rosolowsky. “Identifying Tools for Comparing Simulations of Star Formation.” 2017, [MNRAS 471 1506-1530](#).
5. Y Lin, HB Liu, JE Dale, D Li, G Busquet, ZY Zhang, A Ginsburg, R Galvan-Madrid, A Kovacs, **E Koch**, L Qian, K Wang, S Longmore, HR Chen, D Walker. “Cloud Structure of Three Galactic Infrared Dark Star-forming Regions from Combining Ground- and Space-based Bolometric Observations.” 2017, [ApJ 840 22](#).
4. RD Boyden, **EW Koch**, EW Rosolowsky, SSR Offner. “An Exploration of the Statistical Signatures of Stellar Feedback.” 2016, [ApJ 833 233](#).
3. Y Lin, HB Liu, D Li, Z-Y Zhang, A Ginsburg, JE Pineda, L Qian, R Galván-Madrid, AF McLeod, E Rosolowsky, JE Dale, K Immer, **E Koch**, S Longmore, D Walker, L Testi. “Cloud Structure of Galactic OB Cluster-forming Regions from Combining Ground and Space-based Bolometric Observations.” 2016, [ApJ 828 32](#).
2. **EW Koch**, EW Rosolowsky. “Filament Identification through Mathematical Morphology.” 2015, [MNRAS 452 3435-3450](#).
1. **EW Koch**, A Bahramian, CO Heinke, K Mori, N Rea, N Degenaar, D Haggard, R Wijnands, G Ponti, JM Miller, F Yusef-Zadeh, F Dufour, WD Cotton, FK Baganoff, MT Reynolds. “The 2013 outburst of a transient very faint X-ray binary, 23 arcsec from Sgr A*.” 2014, [MNRAS 442 372-381](#).

Submitted

1. **EW Koch**, EW Rosolowsky, A Schrub, A Leroy, AA Kepley, J Braine, J Dalcanton, MC Johnson. “Relationship between the Line Width of the Atomic and Molecular ISM in M33.” 2019, [None](#).

Non-refereed

2. **E Koch**, E Rosolowsky, AK Leroy. “Radio-line Broadening from a Spectral Response Function.” 2018, [RNAAS 2 220](#).
1. **E Koch**, E Rosolowsky, MC Johnson, AA Kepley, A Leroy. “Detection of an OH 1665 MHz Maser in M33.” 2018, [RNAAS 2 24](#).

Observing Experience

- Two VLA projects as PI (132 hours awarded); One as co-I (48 hours awarded)
- One NOEMA project as co-I (16 hours awarded)
- One ALMA project as co-I (22 hours requested; 6 hours observed)

Professional Talks

- 2018 August *CHANG-ES Team Meeting, Calgary, Canada*
“De-obfuscating HI & CO Comparisons in M33”
- 2018 July *PHAT/M33 Team Meeting, Ringberg, Germany*
“Atomic Gas in M31 and M33”
- 2018 May *Olympian Symposium, Paralia Katerini, Greece*
“Spatially-Varying Turbulent Properties in M33”
- 2017 June *Canadian Astronomical Society (CASCA) Meeting, Edmonton, Canada*
“Linking the Atomic and Molecular ISM in M33”
- 2016 Aug *Lorentz Centre - Apples to Apples Workshop*
“Identifying Tools for Comparing Simulations and Observations of Star-forming Regions”
- 2016 Feb *MPE - CAS Seminar*
“Comparing Simulations and Observations of Star Formation using Experimental Design”
- 2016 Feb *MPIfR - Special Colloquium*
“Comparing Simulations and Observations of Star Formation using Experimental Design”
- 2015 May *Florence Simulations-Observations Workshop (Florence, Italy)*
“Critically Comparing Simulations and Observations of Star Formation”
- 2014 Apr *UBC-O Undergraduate Research Conference (Kelowna)*
“Filament Identification through Mathematical Morphology”
- 2013 Nov *UBC-O Brown Bag Series (Kelowna)*
“A New Low-Mass X-Ray Binary in the Galactic Centre”
- 2013 Apr *UBC-O Undergraduate Research Conference (Kelowna)*
“Converging Flows in Star-Forming Regions”

Poster Presentations

- 2013 Jun *Canadian Astronomical Society Conference (Vancouver)*
“Converging Flows in Star-Forming Regions”

Service

- 2018-Present Referee for MNRAS
- 2013-2014 Physics representative on Quantitative Sciences Course Union Council
- 2016-2017 UAlberta representative on the Canadian Astronomical Society Graduate Student Committee

Outreach

- 2018 December *Royal Astronomical Society of Canada (Edmonton Centre)*
“Unravelling Star Formation”
- 2018 May *Northern Alberta Radio Club (Edmonton)*
“Viewing the Sky with Radio Interferometry”
- 2017 February *University of Alberta Observatory Public Observing Night*
“Blowing Bubbles in a Galaxy”
- 2016 - 2018 *University of Alberta Observatory*
“Public Observing & School Tours”