

# Eric W. Koch

## Curriculum Vitæ

Dept. of Physics, University of Alberta  
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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 | <b>Co-I</b> - <i>A centralized database for pan-chromatic nearby galaxy data</i><br>Amazon Web Services & Square Kilometre Array<br><b>\$3200 USD (credits)</b> |
| 2015 | <b>Co-I</b> - <i>Development of an image variability service in the cloud</i><br>Amazon Web Services & Square Kilometre Array<br><b>\$14000 USD (credits)</b>   |
| 2015 | <b>PI</b> - <i>Developing a radio cube imaging service in the cloud</i><br>Amazon Web Services & Square Kilometre Array<br><b>\$1500 USD (credits)</b>          |

## Publications

### Refereed

9. **EW Koch**, EW Rosolowsky, A Schrubba, 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](#).
8. **EW Koch**, EW Rosolowsky, FJ Lockman, AA Kepley, A Leroy, A Schrubba, 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](#).

### 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

- Three VLA projects as PI (180 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

- 2019 January *Big Apple Magnetic Fields Workshop, New York, USA*  
“Turbustat: Python-based turbulence statistics”
- 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”