

# 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)

## Fellowships and Awards

- 2019              *University of Alberta*  
Andrew Stewart Memorial Graduate Prize
- 2019              *University of Alberta/The Ohio State University*  
Natural Sciences and Engineering Research Council of Canada Michael Smith Foreign Study Supplements
- 2018              *University of Alberta*  
Queen Elizabeth II Graduate Scholarship - Doctoral
- 2017-2019        *University of Alberta*  
Natural Sciences and Engineering Research Council of Canada Alexander Graham Bell Canada Graduate Scholarship - Doctorate
- 2016              *University of Alberta*  
Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarship - Doctoral
- 2015              *University of Alberta*  
Queen Elizabeth II Graduate Scholarship - Masters
- 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*  
Natural Sciences and Engineering Research Council of Canada Alexander Graham Bell Canada Graduate Scholarship - Masters
- 2013              *University of Alberta*  
Natural Sciences and Engineering Research Council of Canada Undergraduate Summer Research Award
- 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	<i>University of British Columbia, Okanagan</i> Natural Sciences and Engineering Research Council of Canada Undergraduate Summer Research Award
2012	<i>University of British Columbia, Okanagan</i> Second Year Physics Award - Honourable Mention
2010	<i>University of British Columbia, Okanagan</i> President's Entrance Scholarship

## Publications

### Refereed

10. **EW Koch**, EW Rosolowsky, RD Boyden, B Burkhart, A Ginsburg, JL Loeppky, SSR Offner. “*TurbuStat: Turbulence Statistics in Python.*” 2019, [AJ 158 1](#).
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, [MNRAS 485 2324](#).
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](#).

## Professional Talks

- 2019 September *So-Star, Paris, France*  
“HI & CO kinematic on molecular cloud scales in the Local Group”
- 2019 April *Center for Astrophysics, Cambridge, USA*  
“Connecting atomic and molecular ISM kinematics on cloud scales in M33”
- 2019 April *Green Bank Telescope, Green Bank, USA*  
“Connecting atomic and molecular ISM kinematics on cloud scales in M33”
- 2019 March *NRAO, Charlottesville, USA*  
“Connecting atomic and molecular ISM kinematics on cloud scales in M33”
- 2019 March *University of Texas, Austin, USA*  
“Connecting atomic and molecular ISM kinematics on cloud scales in M33”
- 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 August *Lorentz Centre - Apples to Apples Workshop*  
“Identifying Tools for Comparing Simulations and Observations of Star-forming Regions”
- 2016 February *Max Planck Institute for Extraterrestrial Physics*  
“Comparing Simulations and Observations of Star Formation using Experimental Design”
- 2016 February *Max Planck Institute for Radio Astronomy*  
“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 April *UBC-O Undergraduate Research Conference (Kelowna, Canada)*  
“Filament Identification through Mathematical Morphology”
- 2013 November *UBC-O Brown Bag Series (Kelowna, Canada)*  
“A New Low-Mass X-Ray Binary in the Galactic Centre”
- 2013 April *UBC-O Undergraduate Research Conference (Kelowna, Canada)*  
“Converging Flows in Star-Forming Regions”

## Poster Presentations

- 2019 June *Linking the Milky Way and Nearby Galaxies, Helsinki, Finland*  
“Connecting atomic and molecular ISM kinematics on cloud scales in M33”
- 2013 June *Canadian Astronomical Society Conference (Vancouver, Canada)*  
“Converging Flows in Star-Forming Regions”

## Service

2018-Present	Referee for MNRAS
2017-Present	Seminar and journal club organizer for UAlbert Astronomy Group
2016-2017	UAlberta representative on the Canadian Astronomical Society Graduate Student Committee
2013-2014	Physics representative on Quantitative Sciences Course Union Council

## Observing Experience

- Three VLA projects as PI (180 hours awarded); one as co-I (24 hours awarded)
- One ALMA project as PI (8 hours awarded); one as co-I (22 hours awarded)
- One GBT project as PI (41 hours awarded)
- One NOEMA project as co-I (16 hours awarded)

## Teaching

2014-2018	<i>University of Alberta</i> “Teaching Assistant for Physics and Astronomy labs”
2011-2013	<i>University of British Columbia, Okanagan</i> “Teaching Assistant for first and second year physics labs”

## Outreach

2019 May	<i>Pint of Science</i> “Frigid Fuel for Star Formation”
2018 December	<i>Royal Astronomical Society of Canada (Edmonton Centre)</i> “Unravelling Star Formation”
2018 May	<i>Northern Alberta Radio Club (Edmonton)</i> “Viewing the Sky with Radio Interferometry”
2017 February	<i>University of Alberta Observatory Public Observing Night</i> “Blowing Bubbles in a Galaxy”
2016 - 2018; 2019-Present	<i>University of Alberta Observatory</i> “Public Observing & School Tours”