

KENNETH HUGHES

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PROFILE

A physics graduate, now PhD student, with a keen interest in environmental applications of physics, specifically combining modelling with field observations to best understand the ocean. Sound academic background with a particular strength in mathematics.

EDUCATION

PhD student in Physical Oceanography	University of Victoria, Canada	September 2014–present
MSc in Physics (with Distinction)	University of Otago, New Zealand	2013
BSc in Physics (Honours – 1st class)	University of Otago, New Zealand	2011

PEER-REVIEWED PUBLICATIONS

Hughes, K. G., J. M. Klymak, X. Hu and P. G. Myers (accepted). Water Mass Modification and Mixing Rates in a $1/12^\circ$ Simulation of the Canadian Arctic Archipelago. *J. Geophys. Res.* doi:10.1002/2016JC012200

Hughes, K. G., P. J. Langhorne, G. H. Leonard and C. L. Stevens (2014). Extension of an Ice Shelf Water plume model beneath sea ice with application in McMurdo Sound, Antarctica. *J. Geophys. Res.* 119, 8662–8687, doi:10.1002/2013JC009411

Hughes, K. G., P. J. Langhorne and M. J. M. Williams (2013). Estimates of the refreezing rate in an ice-shelf borehole. *J. Glaciol.* 59, 938–948, doi:10.3189/2013JoG12J117.

Langhorne, P. J., **K. G. Hughes**, A. J. Gough and 10 others (2015). Observed platelet ice distributions in Antarctic sea ice: an index for ocean–ice shelf heat flux. *Geophys. Res. Lett.* 42, 5442–5451, doi:10.1002/2015GL064508

Leonard, G. H., S. M. Mager, A. G. Pauling, **K. G. Hughes** and I. J. Smith (2014). Towards a process model for predicting potential anchor ice formation sites in coastal Antarctic waters. *J. Spat. Sci.* 59, 297–312, doi:10.1080/14498596.2014.913271

CONFERENCE PROCEEDINGS

Grothe, S., **K. G. Hughes**, and P. J. Langhorne (2014). Crystal orientation in ice frozen from fresh and brackish water. In *Proceedings of the 22nd IAHR International Symposium on Ice*, 743–750, doi:10.13140/RG.2.1.4390.3206

THESES

Master's Thesis: Propagation of an Ice Shelf Water Plume beneath Sea Ice in McMurdo Sound, Antarctica (awarded A+), <http://hdl.handle.net/10523/4325>

Honours Dissertation: On the Rate of Refreezing in a Bore Hole in an Ice Shelf (awarded A+)

AWARDS AND SCHOLARSHIPS

University of Victoria Fellowship	2016, 2014
Arne H. Lane Fellowship in Marine Sciences	2015, 2016
University of Victoria Graduate Award	2015
Best student presentation at Antarctica NZ Annual Science Conference	2012
Antarctica NZ Postgraduate Scholarship	2012
University of Otago Master's Scholarship	2012
Dux of Rangiora High School	2007
Davis Cup (all-round academic and sporting achievement in year 13)	2007

EMPLOYMENT HISTORY

Teaching assistant	University of Victoria	2014, 2016
Independently lead weekly first-year labs and mark lab tests and exams		
Guest lecturer	Universities of Otago and Victoria	March 2014, October 2016
Lecture second-year environmental physics and third-year physical oceanography		
Research assistant	University of Otago	August 2013–May 2014
Collect and reduce data and prepare figures and reports		
Demonstrator for second-year physics course	University of Otago	2012, 2014
Demonstrate practical science methods and explain various software		
Study coach at Big Picture Learning	Dunedin	2009–2012
Tutor science and study skills for high school students and help develop an interactive, online learning tool		

SOFTWARE SKILLS

Frequently used:

Python, Linux, Numerical ocean modelling (MITgcm), LaTeX, Inkscape

Other:

Matlab, Mathematica, Bash, Git

FIELD WORK EXPERIENCE

Haro Strait, British Columbia	October 2016
One day deploying microstructure profilers (part of week-long microstructure workshop)	
Canadian Arctic Archipelago	September 2015
Two weeks as a scientist aboard a Canadian Coastguard ship	
Antarctica	November 2011
Drilling sea ice and deploying CTD profiler while working in approximately -10°C conditions	

CONFERENCE PRESENTATIONS

Nine presentations (eight oral and one poster) at conferences in New Zealand, USA, and Canada

OTHER INTERESTS AND OUTREACH

Four presentations to 8–10 year olds at University of Victoria's Science Venture about oceanography	2016
Blog about presenting science: brushingupscience.wordpress.com	2015–present
Secretary of University of Victoria Kayak Club	2015, 2016
Instructor for University of Victoria Kayak Club	2014–present
Lead organiser of Blissfest 2013: whitewater kayaking competition in Dunedin, New Zealand	2013
President of Otago University Canoe Club	2010–2012