

Jesse Cusack

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Education

2013 – 2018	PhD Ocean and Earth Science, University of Southampton, UK Thesis: Mechanisms of Eddy Dissipation in the Southern Ocean
2012 – 2013	MSc Atmosphere, Oceans and Climate, University of Reading, UK Awarded: Distinction
2008 – 2012	MPhys Physics, University of Manchester, UK Awarded: First class honours

Appointments

2020 - Ongoing	EOAS Postdoctoral fellow, Rutgers University, USA
2018 – 2020	Postdoctoral scholar, Scripps Institution of Oceanography, University of California San Diego, USA
2013 – 2018	PhD student, National Oceanography Centre Southampton/University of Southampton, UK
2015	Exchange student researcher, Woods Hole Oceanographic Institute, USA
2011	Undergraduate summer researcher, Imperial College, London, UK
2010	Undergraduate summer researcher, University of Manchester, UK

Awards & Honours

2020	EOAS postdoctoral fellowship, Rutgers University
2015	Woods Hole exchange program funding, University of Southampton
2013	Water conservation bursary, University of Reading

Teaching Experience

2021	Instructor of Record, Rutgers University <ul style="list-style-type: none">• Python Software Bootcamp
2014	Teaching Assistant, University of Southampton <ul style="list-style-type: none">• Introduction to physical oceanography• Ocean observing measurements and data• Computational data analysis for geophysicists and ocean scientists

Peer-reviewed Publications

- **Cusack, J. M.**, Brearley, J. A., Naveira Garabato, A. C., Smeed, D. A., Polzin, K. L., Velzeboer, N. & Shakespeare, C. J. (2020) Observed eddy-internal wave interactions in the Southern Ocean. *Journal of Physical Oceanography*, 50 (10). 3043-3062. [DOI: 10.1175/JPO-D-20-0001.1](https://doi.org/10.1175/JPO-D-20-0001.1)
- Girton, J. B., Mickett, J. B., Zhao, Z., Alford, M. H., Voet, G., **Cusack, J. M.**, Carter, G., Pearson-Potts, K. A., Pratt, L. J., Tan, S. & Klymak, J. M. (2019) Flow-topography interactions in the Samoan Passage. *Oceanography*, 32 (4). 184–193. [DOI: 10.5670/oceanog.2019.424](https://doi.org/10.5670/oceanog.2019.424)
- Carter, G. S., Voet, G., Alford, M. H., Girton, J. B., Mickett, J. B., Klymak, J. M., Pratt, L. J., Pearson-Potts K. A., **Cusack, J. M.** & Tan, S. (2019) A spatial geography of abyssal turbulent mixing in the Samoan Passage. *Oceanography*, 32 (4). 194–203. [DOI: 10.5670/oceanog.2019.425](https://doi.org/10.5670/oceanog.2019.425)
- **Cusack, J. M.**, Voet, G., Alford, M. H., Girton, J. B., Carter, G. S., Pratt, L. J., Pearson-Potts K. A. & Tan, S. (2019) Persistent Turbulence in the Samoan Passage. *Journal of Physical Oceanography*, 49 (12). 3179–3197. [DOI: 10.1175/JPO-D-19-0116.1](https://doi.org/10.1175/JPO-D-19-0116.1)
- **Cusack, J. M.**, Naveira Garabato, A. C., Smeed, D. A. & Girton, J. B. (2017). Observation of a Large Lee Wave in the Drake Passage. *Journal of Physical Oceanography*, 47 (4). 793–810. [DOI: 10.1175/JPO-D-16-0153.1](https://doi.org/10.1175/JPO-D-16-0153.1)
- Göncü, F., Willshaw, S., Shim, J., **Cusack, J.**, Luding, S., Mullin, T. & Bertoldi, K. (2011). Deformation induced pattern transformation in a soft granular crystal. *Soft Matter*, 7 (6). 2321. [DOI: 10.1039/C0SM01408G](https://doi.org/10.1039/C0SM01408G)

Publications in Review

- Tan, S., Pratt, L., Voet, G., **Cusack, J.**, Helfrich, K., Alford, M., Girton, J., Carter, G., Hydraulic control of flow in a multi-passage system connecting two basins. *Journal of Fluid Mechanics*, In Review.

Publications in Preparation

- **Cusack, J. M.**, Tan, S., Voet, G., Pratt, L. J., Alford, M. H., Carter, G. S. & Girton, J. B., The structure and stability of a deep ocean overflow. 1st draft.
- **Cusack, J. M.**, Jackson, R. H., Nash, J. D., Skillingstad, E. D., Sutherland, D. A., Pettit, E. C., Motyka, R. J., Amundson, J. M. & Winters, D., Internal waves excited by subglacial discharge plumes: an energy source for glacier melt. 2nd draft.
- Voet, G., Alford, M. H., **Cusack, J. M.**, Pratt, L. J., Girton, J. B., Carter, G. S., Klymak, J. M., Tan, S., Thurnherr, A. M., Energy and momentum of a density-driven overflow in the Samoan Passage. 2nd draft.

Sea-going Experience

2021	<i>R/V Walton Smith</i> . Gulf of Mexico. 3 weeks. <i>Operations: VMP, T-chain, CTD</i>
2019	<i>R/V Sally Ride</i> . Western tropical pacific. 2 weeks. Night watch lead. <i>Operations: CTD, moorings, turbulence profiler</i>

2019	<i>R/V Neil Armstrong</i> . Iceland Basin. 2 weeks. <i>Operations: CTD, moorings</i>
2014	<i>RSS James Clark Ross</i> . Scotia Sea and Weddell Sea. 7 weeks. <i>Operations: CTD, water sampling</i>

Additional Training

2015	NERC Arctic fieldwork training short course, Cambridge, UK and Svalbard, Norway
2015	Fluid dynamics of Sustainability and the Environment Summer School, Paris, France
2014	NERC Oceans in Weather and Climate workshop, Met Office, Exeter, UK

Oral Presentations

2021 (<i>invited</i>)	DMCS Seminar, Rutgers University, USA <i>Title: Abyssal mixing processes, from the Antarctic to the Equator</i>
2021 (<i>invited</i>)	University of the Arts, Berlin, Germany <i>Title: Motions in warming oceans: and the ways we use sound to study them</i>
2020 (<i>invited</i>)	Physical Oceanography Seminar, Woods Hole Oceanographic Institution, USA <i>Title: Flow-topography interactions in the Samoan Passage</i>
2020	Ocean Sciences Meeting, San Diego, USA <i>Title: Connections between the large-scale flow and turbulence in the Samoan Passage</i>
2019	IUGG General Assembly, Montreal, Canada <i>Title: Persistence and Variability of Turbulence in the Samoan Passage</i>
2018	Physical Oceanography Doctoral Symposium, Kailua-Kona, Hawaii, USA <i>Title: Mechanisms of Eddy Dissipation in the Southern Ocean</i>
2018 (<i>invited</i>)	CASPO Seminar, Scripps Institution of Oceanography, La Jolla, USA <i>Title: Observation of a Large Lee Wave in the Southern Ocean</i>
2018	Ocean Sciences Meeting, Portland, Oregon, USA <i>Title: Observed eddy - internal wave interaction in the Southern Ocean</i>
2018 (<i>invited</i>)	University of Oxford, Oxford, UK <i>Title: Observation of large lee wave in the Drake Passage</i>
2017	IAPSO-IAMAS-IAGA Joint Assembly, Cape Town, South Africa <i>Title: Eddy dissipation by interaction with internal waves in the Drake Passage</i>
2016	Challenger Society Conference, Liverpool, UK <i>Title: Observations of an energetic lee wave in the Drake Passage</i>
2015	IUGG General Assembly, Prague, Czech Republic <i>Title: Observations of a large lee wave in the Drake Passage</i>

Poster Presentations

2018	Gordon Conference on Ocean Mixing, New Hampshire, USA <i>Title: Observed eddy – internal wave interaction in the Southern Ocean</i>
2016	Challenger Society Conference, Liverpool, UK <i>Title: Observations of spice filaments in the Southern Ocean</i>
2016	Ocean Sciences Meeting, New Orleans, Louisiana, USA <i>Title: Measurements of a lee wave in the Southern Ocean: energy and momentum fluxes and mixing</i>
2014	Challenger Society Conference, Plymouth, UK <i>Title: Observations of a large lee wave in the Drake Passage</i>

Service

2019 - Ongoing	International Association for the Physical Sciences of the Oceans (IAPSO) Early Career Scientists committee member <i>Responsibilities: Website design and maintenance, quarterly meetings</i>
Reviewer	<i>Manuscripts:</i> Journal of Physical Oceanography, Journal of Geophysical Research: Oceans. <i>Proposals:</i> NSF Antarctic Oceans and Atmospheres Program

References

Available upon request.