PROF. THOMAS PEACOCK

Room 3-360, Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139-4307
email: tomp@mit.edu http://meche.mit.edu/people/faculty/tomp@mit.edu tel: 617-258-0736

RESEARCH INTERESTS : Physical Oceanography; Environmental Fluid Mechanics; Stratified Flows; Deep Sea Mining.

EDUCATION

D. Phil. Department of Physics, Oxford University, Oxford, England, 1998.
B. Sc. Department of Physics, The University of Manchester, Manchester, England, 1994.
Graduated with highest first class honors degree in the year.

EMPLOYMENT

2016–present Full Professor with tenure, MIT, Cambridge, MA.
2010–2016 Associate Professor with tenure, MIT, Cambridge, MA.
2008–2010 Associate Professor, MIT, Cambridge, MA.
2007–2008 ARCO Associate Professor, MIT, Cambridge, MA.
2005–2007 ARCO Assistant Professor, MIT, Cambridge, MA.
2003–2005 Assistant Professor, MIT, Cambridge, MA.
2000–2003 Applied Mathematics Instructor, MIT, Cambridge, MA.
1998–2000 Postdoctoral Researcher, University of Colorado, Boulder, CO.

RELEVANT SERVICE, ACTIVITIES & RECOGNITION

2024–present Advisory Board Member, EU *Trident Research Program* (2023-2028).
2023–present Scientific Expert, ISA Advisory Panel on *Thresholds and Standards*.
2022–present Co-founder and Scientific Advisor of *atdepth*.
2022 Plenary Lecture on *The Fluid Mechanics of Deep-Sea Mining*, at the International Symposium on Stratified Flows, Cambridge University.
2022 Research group participation in CCZ technology trials by *The Metals Company*.
2021 **Fellow of the American Physical Society**.
2021 Research group participation in CCZ technology trials by *Global Sea Mineral Resources*.
2020 Co-lead author on *Resilience for the Blue Economy* for the *UN Global Compact*
2020 Invited participant to sessions on *Ocean Leadership*, *Innovation Technology in the Ocean*, and *Ocean Minerals* at World Economic Forum Annual Meeting, Davos.
2019 MIT MechE documentary video entitled *Mining the Deep Sea*.
2019 Invited participant, OECD Meeting on Deep Sea Mining, Paris.
2018 *PLUMEX* research field program for midwater plumes from Deep Sea Mining.
2017–present MIT Representative, International Seabed Authority

RELEVANT PUBLICATIONS

13. Jones, D.O.B.,..., **Peacock, T.**,...and Glover, A.G., "Long-term impact and biological revcovery in a deep-sea mining track," *Nature* (2025).
12. El Mousadik, S.,... and **Peacock, T.**, "In situ optical measurement of particles in sediment plumes generated by a pre-prototype polymetallic nodule collector," *Scientific Reports*, 14, 23894 (2024).
11. **Peacock, T.**, "The GSR Patania II Trials: Technical achievements & scientific learnings", Public Report (2024).
10. **Peacock, T.** and Ouillon, R., "The fluid mechanics of deep-sea mining," *Annual Review of Fluid Mechanics*, 55, 403-430 (2023).
9. Chen, S.Y., Ouillon, R., Muñoz-Royo, C. and **Peacock, T.**, "Oceanic bottom mixed layer in the Clarion-Clipperton Zone: potential influence on deep-seabed mining plume dispersal,"
8. Munoz-Royo, C.,..., and **Peacock, T.**, "An in situ study of abyssal turbidity-current sediment plumes generated by a deep seabed polymetallic nodule mining preprototype collector vehicle," *Science Advances*, 8 (38), (2022).
7. Ouillon, R., ..., and **Peacock, T.**, "Advection-diffusion-settling of deep-sea mining sediment plumes. Part 2: Collector plumes," *FLOW*, 2, E23 (2022).
6. Ouillon, R., ..., and **Peacock, T.**, "Advection-diffusion-settling of deep-sea mining sediment plumes. Part 1: Midwater plumes," *FLOW*, 2, E22 (2022).
5. Munoz-Royo, C., **Peacock, T.**, *et al.*, "Extent of impact of deep-sea nodule mining midwater plumes is influenced by sediment loading, turbulence and thresholds," *Nature Communications Earth & Environment*, 2, 148 (2021).
4. Wang, D., Adams, E.E., Munoz-Royo, C., **Peacock, T.** and Alford, M.R., "Effect of crossflow on trapping depths of particle plumes: laboratory experiments and application to the PLUMEX field experiment,"
3. Drazen, J. C.,..., **Peacock, T.**,... and Yamamoto, H., "Consideration of midwater ecosystems is required to fully evaluate the environmental risks of deep-sea mining," *Proceedings of the National Academy of Sciences,* 117(30), 17455-17460 (2020).
2. Rzeznik, A. J, Flierl, G. and **Peacock, T.** , "Model investigations of dewatering plumes generated by deep-sea mining operations," *Ocean Engineering* 172 (15), 684-696 (2019).
1. **Peacock T.** and Alford, M. R., "Is deep-sea mining worth it?," *Scientific American* 318 (5), 72-77 (2018).