

**Norway-Scotland Symposium on Waves and Marine Physical and Biological Processes** The Norwegian Academy of Science and Letters, Det Norske Videnskaps-Akademi, Drammensveien 78, Oslo, Norway, 30-31 October 2023

## **Program**

### **Monday 30 October**

0830-0900 Registration in the Academy. Coffee served in Gobelin Hall

0900-0920 Welcome and opening. Lise Øvreås, John Grue, Mona Siddiqui, Magda Carr

0920-1030 Session 1 Chair: Peter A. Davies

0920-0940 **Thea Josefine Ellevold** and John Grue. The effects of internal solitary waves on the bottom boundary layer and the resulting instabilities.

0940-1000 **Andrew C. Dale**, Szewczyk, T., Aleynik, D. A., Holloway, M. A propagating internal bore and its influence on sea lice dispersal in a Scottish fjord.

1000-1020 **Leon Boegman**, Amin Ghassemi, Andres Posada-Bedoya & Jason Olsthoorn, Sediment resuspension and transport by shoaling periodic internal solitary waves.

1020-1030 Discussion

1030-1050 Coffee break

1050-1200 Session 2 Chair: David Dritschel

1050-1110 **Hans Burchard**, Karsten Bolding, Xaver Lange, and Alexander Osadchiev. Decomposition of estuarine circulation and residual stratification under land-fast sea ice.

1110-1130 **Jen MacKinnon**. Everything Everywhere all at Once: interactions of internal waves and submesoscale fronts in the coastal ocean.

1130-1150 **Ingrid A. Johnsen**, Johannes Röhrs, and Tina Kutti. Exploring the role of food delivery mechanisms in regulating the distribution of the cold water coral *Lophelia Pertusa*

1150-1200 Discussion

1200-1300 LUNCH

1300-1410 Session 3 Chair: Lise Øvreås

1300-1320 **Anne E. Magurran**. On biodiversity change in marine systems.

1320-1340 **T. Frede Thingstad**. Ecosystem functions of the marine microbial food web and why this is different in the Arctic and in the Mediterranean.

1340-1400 **Paul Wassmann**. Seasonal cycle of plankton and sympagic-pelagic-benthic coupling in Svalbard coastal waters and adjacent seas: a climate change perspective.

1400-1410 Discussion

1410-1425 Short break

1425-1535 Session 4 Chair: Karsten Trulsen

1425-1445 Samuel Hartharn-Evans, **Magda Carr**, and Marek Stastna. Internal solitary wave interaction with floating surface bodies.

1445-1505 **Atle Jensen**. Waves and icebergs in the Arctic.

1505-1525 **Anirban Guha**. An inverse technique for reconstructing ocean's density stratification from surface data.

1525-1535 Discussion

1535-1605 Break. Coffee and tea

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## Monday 30 October, continued

1605-1715 Session 5 Chair: Anne Magurran

1605-1625 **Lise Øvreås**. Marine microbial diversity: abundance, distribution, and regulatory factors.

1625-1645 **William T. Sloan**, Erifyli Tsagkari, Andrew McBride, Zhaowei Lium Stephanie Connelly. The role of oscillating shear stress in the formation of bacterial biofilms in drinking water.

1645-1705 **David McKee** and Stacey Connan-McGinty. Modelling Arctic light fields over the full annual cycle.

1705-1715 Discussion

1715-1730 Short break

1730-1820 Session 6 Chair: Mark Inall

1730-1750 **John Grue** and Johannes Röhrs. Vesterålen on the Norwegian Shelf: A hot-spot of short, strong internal waves.

1750-1810 **Johannes Röhrs**, John Grue, Thea Ellevold, Henrik Søiland, and Øystein Skagseth. Properties of intermittent mixing in a benthic boundary layer under internal wave breaking events.

1810-1820 Discussion

1830 Reception

1900-2200 Banquet

## Tuesday 31 October

0830-0900 Coffee. Gobelin Hall

0900-1010 Session 7 Chair: Johannes Röhrs

0900-0920 **Ilker Fer**. Observations of tidal forcing, lee waves, and turbulent mixing in the Arctic Ocean north of Svalbard.

0920-0940 **Henrik Søiland**, Øystein Skagseth and Till Martin Baumann. Observations of internal wave breaking and associated currents at the continental shelf off Vesterålen.

0940-1000 **Peter Diamessis**, Tilemachos Bolioudakis, Theodoros Diamantopoulos, Ren-Chieh Lien, Kevin Lamb, Gustavo Rivera-Rosario, Greg Thomsen. Development and Evolution of Turbulence in the Subsurface Recirculating Cores of Convectively Breaking Internal Solitary Waves Shoaling over Gently Varying Bathymetry.

1000-1010 Discussion

1010-1030 Coffee break

1030-1205 Session 8 Chair: Magda Carr

1030-1050 **Eleanor Johnstone**, Donald Slater, Martim Mas e Braga, Tom Cowton, Neil Fraser, Mark Inall. Investigating Glacial Fjord Processes Using Box Models.

1050-1110 **Alan Cuthbertson**, Otto Neshamar, Øyvind Thiem, Peter Davies and Jarle Berntsen. Experimental Modelling of Rock Dumping Operations in a Norwegian Fjord.

1110-1130 **André Staalstrøm**. Circulation in the Drammen Fjord.

1130-1150 **Mark Inall**, Mike Meredith, James Coogan. Mixing in tidewater glaciated fjords: plumes versus internal waves.

1150-1205 Discussion

1205-1305 LUNCH

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**Tuesday 31 October**, continued

1305-1415 Session 9 Chair: John Grue

1305-1325 **Tor Nordam**, Arsalan Mostaani, Andreas Steinvik, Emlyn J. Davies, Frode Leirvik. Entrainment by breaking waves: Measurements and modelling.

1325-1345 **Karen Samseth**, Eva Charlotte Berner & Karsten Trulsen. Extreme waves and extreme forces on submerged structures above and behind soils.

1345-1405 Q. Xiao, R. Calvert, M.L. McAllister, S.Q. Yan T.A.A. Adcock, and **T.S. van den Bremer**. Surface gravity wave-induced drift of floating objects: faster than the Stokes drift?

1405-1415 Discussion

1415-1440 Break. Coffee and tea

1440-1550 Session 10 Chair: Atle Jensen

1440-1500 **Martin Ludvigsen**. The VISTA CAROS center: Efficient and Sustainable Subsea Operations through Autonomous Inspection and Intervention Robotics.

1500-1520 **Marek Stastna**, Sierra Legare, Samuel-Hartharn-Evans, Magda Carr. Internal Wave Shoaling: numerical challenges and diagnostic tools.

1520-1540 **Jan Erik H. Weber** and Pål Erik Isachsen. Energy transfer from sub-inertial Kelvin waves to continental shelf waves at a transverse bottom escarpment: Application to the coast northwest of Norway.

1540-1550 Discussion

1550-1600 Closing remarks. John Grue, Peter A. Davies, Lise Øvreås

1600 Adjourn