

## Curriculum Vitae - ILKER FER

**Position** Professor, Geophysical Institute, University of Bergen  
Also affiliated with the Bjerknes Centre for Climate Research

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**Date of birth** 24.09.1973

### Professional Preparation

2001 Ph.D. Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland.  
1997 M.Sc. Institute of Science and Technology, Technical University of Istanbul, Turkey.  
1995 Civil engineer. Technical University of Istanbul, Turkey.

### Appointments

2008 – present Professor, Geophysical Inst. (Gfi), Univ. of Bergen (UoB)  
2007 – 2008 Associate professor, Gfi, UoB  
2007 - present Co-leader, “Coastal and Small Scale Processes” group, Gfi, UoB  
2004 – present Scientist, Bjerknes Centre for Climate Research (BCCR)  
2006 - present Co-leader, “Ocean-Ice-Atmosphere processes” research group, BCCR  
2005- 2007 Leader, “Ocean Mixing and Climate” working group, BCCR  
2002-2007 Lecturer, Gfi, UoB  
2002 – 2004 Post-doctoral researcher, Gfi, UoB  
2001 - 2002 Scientist, Gfi, UoB  
1997 -2001 Res./teaching assist., EPFL, Lausanne, Switzerland.  
1995 –1997 Res./teaching assist., Hydraulics Res. Lab., Tech.Univ. of Istanbul, Turkey.

### Field-work experience (last 5 years)

8 - 13 Apr 2011 *R/V Johan Hjort*  
18 - 23 Mar 2011 Chief Scientist, expedition to Van Mijenfjord (on ice)  
31 Jul -17 Aug 2010 Chief Scientist, *R/V Håkon Mosby* (cruise # 2010 614)  
10 -18 August 2009 Chief Scientist, *R/V Håkon Mosby* (cruise # 2009 619)  
23 Jan – 6 Mar 2009 RRS Ernest Shackleton (cruise # ES033)  
18 Sept.-1 Oct. 2008 Chief Scientist, *R/V Håkon Mosby* (cruise # 2008 617)  
29 May-8 Jun 2008 Chief Scientist, *R/V Håkon Mosby* (cruise # 2008 610)  
16-27 Apr 2008 Field work from *ice base Barneo* at 89°N  
10 Jul-4 Aug 2007 Chief Scientist, *R/V Håkon Mosby* (cruise # 2007 613).  
20-29 Apr 2007 Field work from *ice base Barneo* at 89°N.  
18-31 Mar 2007 *K.V. Svalbard* ; 6-19 Feb 2007 *R/V Helmsand*.  
1-19 Aug 2006 Chief Scientist, *R/V Håkon Mosby* (cruise # 2006 615).  
20-23 Apr 2006 *North Pole Environmental Observatory*.

### **Involvement in scientific projects (last 5 years)**

- 2011-15 Faroe Bank Channel Overflow: Dynamics and Mixing (RCN) PI
- 2011-14 Antarctic ice shelves and ocean climate (RCN) PI
- 2010-13 Arctic Ocean Mixing (RCN) PI
- 2010-13 Internal hydraulic processes in an Arctic fjord (RCN) PI
- 2009-10 Cabled Ocean Observatory (Pre-project, RCN)
- 2009-10 Arctic Operational Oceanography Network in ESONET (EU)
- 2009-16 The Norwegian Centre for Offshore Wind Energy (RCN) PI of WP5.6
- 2007-08 Ocean Mixing in the Arctic: Case study at the NPEO (RCN) PI
- 2007-09 Current Profiling north of Svalbard - An extension of NPEO (RCN) co-PI
- 2007-10 Bipolar Atlantic Thermohaline Circulation- BIAC, (RCN) PI of WP3.
- 2007-10 Climate of Norway and the Arctic in the 21st Century – NorClim (RCN)
- 2007-10 Polar Climate and Heat Transport –POCAHONTAS (RCN).
- 2006-09 Developing Arctic Mod.&Obs. Cap. for Long-term Env. Stud. DAMOCLES (EU)
- 2006-07 Understanding sea ice response to warming climate (Meltzer) co-PI

### **Teaching**

- 2010– present Introduction to Master’s thesis work (Gfi, UoB)
- 2008 – present Introduction to dynamics of ocean and atmosphere (Gfi, UoB)
- 2002 – present Turbulence in the atmospheric and oceanic boundary layers (Gfi, UoB)
- 1998 – 2001 Teaching assist. Fluid mechanics, fluvial hydraulics (EPFL, Switzerland)

### **Advisee**

- |                       |   |
|-----------------------|---|
| M. Bakhoday Paskayabi | Ph.D., current, University of Bergen                        |
| Mari Jensen           | M.Sc., current, University of Bergen                        |
| Anja Meyer            | M.Sc., 2011, University of Bergen                           |
| Knut S. Sponheim      | Ph.D., 2011, Norwegian University of Science and Technology |
| Florian Geyer         | Ph.D, 2010, University of Bergen                            |
| Anders Sirevaag       | Ph.D., 2009, University of Bergen                           |
| Arild Sundfjord       | Ph.D., 2007, University of Bergen                           |
| Karolina Widell       | Ph.D., 2006, University of Bergen                           |
| Itzel R.-Baroni       | M.Sc., 2008, University of Bergen                           |
| Kjersti L. Daae       | M.Sc., 2008, University of Bergen                           |
| Kristin Richter       | M.Sc., 2005, University of Bergen                           |

### **Synergistic Activities**

Leader of the program-board (to do with education and students), GFI (2009 –Aug. 2011); Member of the study-board of the Mat-Nat faculty (2009 – Aug. 2011); Member of SIOS working group on geophysical processes in the Arctic (2009 and on); Member of user group committee on designing an ice-going research vessel, 2008-2010; Initiator (together with M. Dengler) of the Ocean Microstructure Community in Europe; Convener SPM1.4, Ocean Microstructure Community in Europe, European Geosciences Union, General Assembly 2010, Vienna, Austria, 2-7 May 2010; Chairperson, Changes in Arctic sea ice and ocean: observations, simulations and outlook (convener, U. Schauer), European Geosciences Union, General Assembly 2010, Vienna, Austria, 2-7 May 2010; Member of AGU since 2007, Reviewer for JGR, GRL, CSR, DSR, L&O, JPO, and for national research agencies for USA, UK, France and New Zealand.

## List of publications

### Peer-reviewed articles (since 2004)

38. **Fer, I.**, K. Makinson, and K. Nicholls (2011). Observations of thermohaline convection adjacent to Brunt Ice Shelf, *J. Phys. Oceanogr.* submitted.
37. Bakhoday Paskyabi, M., **I. Fer**, and A. D. Jenkins (2011). Surface gravity wave effects on the upper ocean boundary layer: modification of a one-dimensional vertical mixing model. *Cont. Shelf Res.*, accepted.
36. **Fer, I.**, and K. Drinkwater (2011). Mixing in the Barents Sea Polar Front near Hopen in spring. *J. Mar. Sys.*, accepted.
35. Seim, K. S., **I. Fer**, and H. Avlesen (2011). Stratified flow over complex topography. *Cont. Shelf Res.*, accepted.
34. Eakin D., W.S. Holbrook, and **I. Fer** (2011). Seismic reflection imaging of large-amplitude lee waves in the Caribbean Sea. *Geophys. Res. Lett.*, 38, L21601, doi:10.1029/2011GL049157.
33. Darelus, E., **I. Fer**, and D. Quadfasel (2011). Faroe Bank Channel Overflow: Mesoscale Variability. *J. Phys. Oceanogr.* 41(11), 2137-2154
32. Seim, K. S., and **I. Fer** (2011). Mixing in the stratified interface of the Faroe Bank Channel overflow: the role of transverse circulation and internal waves. *J. Geophys. Res.*, 116, C07022, doi:10.1029/2010JC006805.
31. Sirevaag, A., S. de la Rosa, **I. Fer**, M. Nicolaus, M. Tjernström, and M.G. McPhee (2011). Mixing, heat fluxes and heat content evolution of the Arctic Ocean mixed layer. *Ocean Sci* , 7, 335-349, doi:10.5194/os-7-335-2011.
30. **Fer, I.**, P. Nandi, W. S. Holbrook, R. W. Schmitt, and P. Páramo, 2010. Seismic imaging of a thermohaline staircase in the Western Tropical North Atlantic, *Ocean Sci.*, 6, 621-631, doi:10.5194/os-6-621-2010.
29. Chavanne, C. P., K. J. Heywood, K. W. Nicholls, and **I. Fer**, 2010. Observations of the Antarctic Slope Undercurrent in the Southeastern Weddell Sea. *Geophys. Res. Lett.*, 37, L13601, doi:10.1029/2010GL043603.
28. Seim, K. S., **I. Fer**, and J. Berntsen, 2010. Regional simulations of the Faroe Bank Channel overflow using a  $\sigma$ -coordinate ocean model. *Ocean Modell.*, 35, 31-44, doi:10.1016/j.ocemod.2010.06.002
27. **Fer, I.**, G. Voet, K. S. Seim, B. Rudels, and K. Latarius, 2010. Intense mixing of the Faroe Bank Channel overflow. *Geophys. Res. Lett.*, 37, L02604, doi:10.1029/2009GL041924.
26. Geyer, F, **I. Fer**, and L. H. Smedsrud, 2010. Structure and forcing of the overflow at the Storfjorden sill and its connection to the Arctic coastal polynya in Storfjorden. *Ocean Sci.*, 6(1), 401-411.
25. **Fer, I.**, R. Skogseth, and F. Geyer, 2010. Internal waves and mixing in the Marginal Ice Zone near the Yermak Plateau. *J. Phys. Oceanogr.*, 40, 1613-1630, doi: 10.1175/2010JPO4371.1.
24. Holbrook, W. S., **I. Fer**, and R. W. Schmitt, 2009. Images of internal tides near the Norwegian continental slope *Geophys. Res. Lett.*, 36, L00D10, doi:10.1029/ 2009GL038909.
23. **Fer, I.**, 2009. Weak vertical diffusion allows maintenance of cold halocline in the central Arctic. *Atmos. Ocean. Sci. Lett.*, 2(3)-148-152.
22. Daae, K.L., **I. Fer**, and E.P. Abrahamson, 2009. Mixing on the continental slope of the southern Weddell Sea. *J. Geophys. Res.*, 114, C09018, doi:10.1029/2008JC005259.
21. Geyer, F., **I. Fer**, and T. Eldevik, 2009. Dense overflow from an Arctic fjord: Mean seasonal cycle, variability and wind influence. *Cont. Shelf Res.*, 29(17), 2110–2121.
20. Sirevaag, A., and **I. Fer**, 2009. Early spring oceanic heat fluxes and mixing observed from drift stations north of Svalbard. *J. Phys. Oceanogr.*, 39(12), 3049-3069.
19. **Fer, I.**, and W.S. Holbrook, 2008. Seismic reflection methods for study of the water column. In *Encyclopedia of Ocean Sciences* 2nd edn., Eds. J.H. Steele, K.K. Turekian, and S.A. Thorpe. Oxford, Academic Press.

18. **Fer, I.**, and B. Ådlandsvik, 2008. Descent and mixing of the overflow plume from Storfjord in Svalbard: An idealized numerical model study. *Ocean Science*, 4, 115-132.
17. Skogseth, R., L.H. Smedsrud, F. Nilsen, and **I. Fer**, 2008. Observations of hydrography and downflow of brine-enriched shelf water in the Storfjorden polynya, Svalbard. *J. Geophys. Res.*, 113, C08049, doi:10.1029/2007JC004452.
16. **Fer, I.**, K. Widell, 2007. Early spring turbulent mixing in an ice-covered Arctic fjord during transition to melting. *Cont. Shelf Res.* doi:10.1016/j.csr.2007.04.003.
15. Sundfjord, A., **I. Fer**, Y. Kasajima, H. Svendsen, 2007. Observations of turbulent mixing and hydrography in the Marginal Ice Zone of the Barents Sea. *J. Geophys. Res.*, 112, C05008, doi:10.1029/2006JC003524.
14. **Fer, I.** and A. Sundfjord, 2007. Observations of upper ocean boundary layer dynamics in the marginal ice zone, *J. Geophys. Res.*, 112, C04012, doi:10.1029/2005JC003428.
13. Widell, K., **I. Fer**, and P.M. Haugan, 2006. Salt release from warming sea ice. *Geophys. Res. Lett.*, 33, L12501, doi:10.1029/2006GL026262.
12. **Fer, I.**, 2006. Scaling turbulent dissipation in an Arctic fjord. *Deep-Sea Res. II*, 53, 77-95.
11. Holbrook, W.S., and **I. Fer**, 2005. Ocean internal wave spectra inferred from seismic reflection transects. *Geophys. Res. Lett.*, L15604, doi: 10.1029/2005GL023733.
10. Skogseth, R., **I. Fer**, and P.M. Haugan, 2005. Dense-water production and overflow from an Arctic coastal polynya in Storfjorden. In *The Nordic Seas: An Integrated Perspective*, edited by H. Drange, et al., pp. 73-88, AGU Geophysical Monog., 158.
9. **Fer, I.**, M.G. McPhee, and A. Sirevaag, 2004. Conditional statistics of the Reynolds stress in the under-ice boundary layer. *Geophys. Res. Lett.*, 31, L15311, doi:10.1029/2004GL020475.
8. **Fer, I.**, R. Skogseth, and P.M. Haugan, 2004. Mixing of the Storfjorden overflow (Svalbard Archipelago) inferred from density overturns. *J. Geophys. Res.*, 109, C01005, doi:10.1029/2003JC001968.

### **Invited Talks**

- Internal waves and vertical mixing in the Arctic Ocean, mechanics seminar, University of Oslo, 11 March 2011.
- Vertical mixing in the Arctic Ocean. Arctic Frontiers, Tromsø, 23-28 January 2011.
- Entrainment and Mixing of the Faroe Bank Channel Overflow. European Geosciences Union, General Assembly 2010, Vienna, Austria, 2-7 May 2010.
- Mixing of the Faroe Bank Channel Overflow. In *Our Warming Planet*, MOCA-09 IAPSO Symposia, Montreal, Canada, July 20-24, 2009.
- Near inertial internal waves and mixing in the Arctic Ocean DNVA-RSE Norway-Scotland Internal Waves Symposium, Oslo 14-15 October 2008.
- Seismic Oceanography: Where We Are, Where We're Going. In *ASLO/AGU Ocean Sciences Meeting* March 2-7, 2008 - Orlando, Florida, USA.
- Mixing of the Storfjorden overflow. In *QuantAS Workshop*, Warnemünde, 31 Aug- 1Sept. 2006. Baltic Sea Research Institute, Warnemünde, Germany.
- Formation, export and mixing of dense water on polar shelves: Results from the Storfjorden laboratory. In *Coastal and Shelf Seas -Present Understanding and Future Challenges*, Bangor, UK, 10-12 April 2006, Univ. of Wales, Bangor, UK. (key note lecture)

See <http://folk.uib.no/ngfif/> for other publications and information.