

IAN M. BROOKS

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EMPLOYMENT

- 2010–Present: University of Leeds, Leeds, UK
Senior Lecturer in Atmospheric Science
- 2008–2010: University of Leeds, Leeds, UK
Lecturer in Atmospheric Science
- 2002–2008: University of Leeds, Leeds, UK
University Research Fellow
- 1998–2002: Scripps Institution of Oceanography, University of California, San Diego, USA
Assistant Project Scientist
- 1994–1998: Scripps Institution of Oceanography, University of California, San Diego, USA
Post-doctoral Research Assistant
- 1993–1994: University of Manchester Institute of Science and Technology, UK
Post-doctoral Research Assistant
- 1990–1993: University of Manchester Institute of Science and Technology, UK
Graduate Research Assistant

EDUCATION

- 1990–1993: University of Manchester Institute of Science and Technology, UK
Ph.D. in Atmospheric Physics – Laboratory Studies of Thunderstorm Electrification Processes
- 1987–1990: University of Manchester Institute of Science and Technology, UK
B.Sc. Pure and Applied Physics (Hons, 1st class)
(course prize 1988, 1989, 1990; Henry Lipson Prize for best final year research project)

GRANTS FUNDED

- Aerosol-Cloud Coupling And Climate Interactions in the Arctic (ACCACIA)(PI). Consortium proposal with: University of Manchester, University of York, UEA, British Antarctic Survey, and the Met Office + international partners at NOAA Earth System Research Laboratory (Boulder, CO), University of Oslo (Norway), and Max Planck Institute for Meteorology (Hamburg).
NERC, £3M, 01/04/2012 – 31/3/2016
- Arctic Summer Cloud-Ocean Study (ASCOS) Analysis, July 2010, (PI). Collaboration with University of Stockholm, NOAA Earth System Research Laboratory, and UK Met Office
NERC, £388,700, 01/09/2010 – 31/08/2013
- Air-Sea Interaction and Sea-spray in Typhoons (ASIST), January 2010, (PI) Collaborative project with Rosenstiel School of Marine and Atmospheric Science, University of Miami
NERC, £488,500, 01/02/2010 – 30/9/2013
- Waves, Aerosol and Gas Exchange Study (WAGES), Dec 2008, (PI) Joint with National Oceanography Centre, Southampton (CoIs: M. Srokosz, M. Yelland, C. Gommenginger)
NERC, £1.2M, 01/08/2009 – 31/3/2013
- Physical Exchange at the Air-Sea Interface: Synthesis and Dissemination, April 2008, (PI)
NERC, £35,400, 01/09/2008 – 31/05/2010
- Modelling Studies of Arctic Stratus, February 2008, (PI)
NERC CASE PhD Studentship with Met Office, £74,000, 01/10/2008 – 31/3/2012

Southern Ocean Sea-spray Aerosol Flux Experiment (SO-SAFE), December 2007, (PI) Collaborative project with Rosenstiel School of Marine and Atmospheric Science, University of Miami
NERC, £53,126, 01/01/2008 – 31/12/2009

Turbulent Exchange in the Arctic Boundary Layer, December 2006, (PI). Contribution to a major International Polar Year project (ASCOS) with 14 international partners.
NERC, £97,600, 01/08/2007 – 31/12/2010

T-REX : Turbulence and Surface Energy Budget, February 2006, (PI)
NCAS, £37,700, 01/03/2006 – 28/02/2007,

Atmosphere-canopy interaction over complex terrain, June 2005, (CoI with A. Ross (PI) & S. Mobbs)
NERC, £235,500, 01/10/2005 – 30/09/2008

Field Observations of Sea Spray, Gas Fluxes and Whitecaps (SEASAW), May 2005, (PI)
NERC, £217,500, 01/07/2006 – 31/12/2009

FAAM: Turbulence Probe Development, August 2003, (PI), Joint project with Met Office
UMIST Ventures (NERC Subcontract), £40,000, 1/9/2003 – 31/3/2005

Initial feasibility study of the use of spray turbines to increase rain in drought-stricken regions,
October 2002, (CoI, with S. Salter (Edinburgh University, PI) and S. D. Mobbs)
EPSRC, £51,900, 1/3/2003 – 28/2/2004

Entrainment Processes at the top of the stable marine atmospheric boundary layer, March 2001, (PI)
US National Science Foundation, \$69,900

Turbulence Processes in the Stable Marine Atmospheric Boundary Layer, Nov 2000, (PI)
US Office of Naval Research, \$118,500

PROFESSIONAL AFFILIATIONS & ACTIVITIES

MEMBERSHIPS

Fellow of the Royal Meteorological Society
Member of the American Meteorological Society
Member of the American Geophysical Union
Member of the Challenger Society for Marine Science

SERVICE

Grant proposal reviewer for: UK Natural Environment Research Council, Leverhulme Trust, US National Science Foundation, US National Oceanographic and Atmospheric Administration (NOAA), Deutsche Forschungsgemeinschaft (German Research Foundation)

Journal peer reviewer for: Geophysical Research Letters, Journal of Geophysical Research, Quarterly Journal of the Royal Meteorological Society, Journal of Applied Meteorology (and Climatology), Journal of the Atmospheric Sciences, Journal of Atmospheric and Oceanic Technology, Journal of Physical Oceanography, Boundary-Layer Meteorology, Atmospheric Research, Atmospheric Science Letters, Applied Optics, Journal of Operational Oceanography, Atmospheric Chemistry & Physics, Polar Record, Advances in Meteorology.

Associate Editor, Atmospheric Chemistry and Physics/Ocean Science/Atmospheric Measurement Techniques joint ASCOS project special issue (2010-2012)

Organiser & Co-Chair, UK Arctic Science Conference, Leeds, September 14-16, 2011.

Joint Organiser and Chair, EU-COST SOLAS Workshop on Primary Marine Aerosol Fluxes, NUI Galway, May 10-11, 2010

Session Chair, AMS 15th Conference on Air-Sea Interaction, Portland, Oregon, August 2007.

‘Weather Weekend’ – 2-day course on meteorology, forecasting, and climate run for the YHA, 2002-2005. 2005 course jointly sponsored by the Royal Meteorological Society.

‘Wild Weather’ – short talks to groups of School children as part of university of Leeds activities for National Science Week 2004.

INVITED TALKS

Department of Meteorology, University of Reading, UK, *November 2011*

Royal Meteorological Society meeting on Physical Processes in Polar Regions, University of Leeds, *Sept 16 2011*.

Invited speaker, UK Polar Network Workshop – Investigating Variability in Polar Climates: Past, Present and Future, *April 2010* – meeting for PhD students and early career researchers in polar science.

School of Environmental Science, University of East Anglia, UK, *February 2008*

Rosenstiel School of Marine & Atmospheric Science, University of Miami, Florida, USA, *January 2008*

National Oceanography Centre, Southampton, *November 2007*

Department of Meteorology, University of Stockholm, Sweden, *December 2004*

Department of Physics, University of Aberystwyth, *May 2004*

FIELD EXPERIENCE

Jul.-Aug. 2010: ASIST/ITOP – deployment of aerosol flux measurement systems on autonomous buoys in Pacific Ocean; joint with University of Miami.

2009-2012: WAGES – continuous direct measurement of air-sea fluxes from RRS James Clarke Ross. 2-3 manned cruises each year; deployment of spar buoy and balloon borne instruments.

Jul.-Sept. 2008: ASCOS – lead scientist for surface meteorology component of multidisciplinary field campaign in central Arctic Ocean. Installed turbulent flux masts, SODAR, and tethered balloon profiling system on sea ice.

Apr. 2008: balloon-borne in-situ measurements of turbulence dissipation rate and aerosol spectra for calibration of lidar retrievals.

Jan. 2008: Integration of high rate aerosol instrument into flux measurement system on University of Miami's Air-Sea Interaction Spar (ASIS) buoys for deployment Apr. 2008 in Southern Ocean.

Mar.-Apr. 2007: SEASAW project, 4-week air-sea interaction cruise on RRS Discovery – eddy covariance measurements of CO₂ and sea-spray aerosol fluxes and bubble spectra, Principal Science Officer for cruise.

Nov.-Dec. 2006: SEASAW project, 6-week air-sea interaction cruise on RRS Discovery – eddy covariance measurements of CO₂ and sea-spray aerosol fluxes. Planning of campaign, design of measurement systems, liaison with other projects sharing ship time.

2006-2007: Canopy Flow Experiment, 2006 – eddy covariance flux measurements in flow over a forested hill, Isle of Arran. Planning of field programme, design of measurement systems.

Mar., Apr. 2006: Terrain-induced Rotor Experiment (TREX) – Design, fabrication and installation of turbulent & radiative flux measurement sites in Owens Valley, California.

Jun.-Jul. 1996: Coastal Waves '96 – member of science team, and flight planning on NCAR C-130

Apr. 1996: SHAREM-115 – member of science team on Meteorological Research Flight C-130

Jun.-Jul. 1994: Monterey Area Ship Tracks (MAST) experiment – member of science team & instrument operator on Meteorological Research Flight C-130

GRADUATE STUDENT SUPERVISION

PhD STUDENTS

Dominic Salisbury, 01/9/2010 – current

Air-sea flux estimates from satellite remote sensing products, funded via ASIST project grant.

David Tupman, 01/09/2009 – current

Air-sea gas exchange, funded via WAGES project grant.

Thomas Pleavin, 01/10/2008 – current

Large eddy simulation of arctic stratus cloud, funded via NERC Open CASE studentship with Met Office

Matthew Hobby, 01/10/2007 – current (part time student & member of technical support staff)

Development of a balloon-borne tethered sonde for turbulence measurement

Cathryn Birch, 01/10/2006 – 30/10/2009

Surface-atmosphere coupling over the central arctic ocean. NERC quota studentship + CASE award from Met Office

Member of PhD advisory/support group for: Sarah Norris (2003-2006), Paul Smith (2005-2009), Rosey Grant (2006-2010), Tom Breider (2006-2010), Lawrence Jackson (2007-present), Bradley Jemmet-Smith (2009-Present)

Internal PhD Examiner, University of Leeds, March 2012 – “Predictability and dynamics of potential vorticity streamers and connections to high impact weather” – Arwen Twitchett

External PhD examiner, University of Southampton, December 2009 – “Measurements of Sub-Surface Bubble Populations and the Modelling of Air-Sea Gas Flux” – David Coles

Internal PhD examiner, University of Leeds, December 2009 – “Turbulence as a Mediator of Processes in a Macrotidal Estuary” – William Thurston

MASTERS PROJECT STUDENTS

Rebecca Jansen, 2010 – 2011 : Analysis of aircraft measurements of surface fluxes over inhomogeneous Antarctic sea ice.

Ruth Loughrey, 2009 – 2010 : Sodar retrievals of Arctic boundary layer structure.

Andrew Fish, 2008 – 2009 : Sodar measurements of surface mixed layer depth in the Arctic boundary layer. (Poster presented at AMS Conference on Polar Meteorology & Oceanography, 2009)

Anthony Bloom, 2006 – 2007 : Measurement and modelling of air-sea CO₂ exchange (Poster presented at AMS Conference on Air-Sea Interaction, 2007)

Alison Fowler, 2005 – 2006 : Large eddy simulation of entrainment processes (poster presented at AMS Conference on Boundary Layers and Turbulence, awarded student poster prize; work published in Geophysical Research Letters 2007)

MISCELLANEOUS

Supervised NERC Research Experience Placement student (competitively funded), Samantha Clarke, summer 2010 – analysis of large eddy simulations of entrainment processes.

Supervised and funded undergraduate students for research internships summer 2009, 2010

TEACHING

MANAGEMENT

Programme manager, M.Res. Physics of the Earth & Atmosphere, School of Earth & Environment, University of Leeds, 2006-2010

UNDERGRADUATE TEACHING

Ocean and Atmosphere Climate Change Processes – level 3 lecture course – 2005-present. Developed and teach 2/3 of module. Module manager.

Oceanography in the Earth System – level 3 lecture course – 2009-present. Developed and teach 1/3 of module: physical oceanography.

Introduction to Meteorology and Weather Forecasting – level 1 lecture course – 2004-2006.
Developed whole module, taught and managed module.

Introduction to Oceanography – level 1 lecture course – 2003-2005. Developed and taught 20% of module : air-sea interaction.

Advance Field Course – level 2 4-day field course – 2002-2006, 2010-present. Teach 50% of course : atmospheric science, developed 20% of exercises. Managed module 2004-2006.

Atmospheric Science Field Course – level 3 6-day field course – 2002-2006. Jointly developed exercises in surface energy balance measurement and turbulent flux analysis; measurement of wind profiles from pilot balloon tracking.

Environmental Science Skills – level 2 module – 2002-2005.

Final year dissertation project supervision – 2003-present.

Undergraduate personal tutor 2003-2006

GRADUATE TEACHING

Introduction to MATLAB programming – short course for PhD students from faculties of Environment and Maths and Physical Sciences. 2004-2007, 2009-present.

Personal tutor for MRes students 2006-2010

PUBLICATIONS

2012

30. Norris, S. J., **I. M. Brooks**, M. K. Hill, B. J. Brooks, M. H. Smith, and D. A. J. Sproson, 2012: Eddy Covariance Measurements of the Sea Spray Aerosol Flux over the Open Ocean. *J. Geophys. Res.* (IN PRESS)
- 29 **Brooks, I. M.** and A. M. Fowler, 2012: An Evaluation of boundary-layer depth, inversion and entrainment parameters by large eddy simulation. *Bound.-Layer Meteorol.* **142**, 245-263, doi: 10.1007/s10546-011-9668-3

2011

- 28 Held A., **I. M. Brooks**, C. Leck, Michael Tjernström, 2011: On the potential contribution of open lead particle emissions to the central Arctic aerosol concentration. *Atmos. Chem. Phys.* **11**, 3093-3105, doi:10.5194/acp-11-3093-2011.
- 27 Norris, S. J., **I. M. Brooks**, G. de Leeuw, A. Sirevaag, C. Leck, B. J. Brooks, C. E. Birch, and M. Tjernström, and 2011: Measurements of bubble size spectra within leads in the Arctic summer pack ice. *Ocean Science*, **7**, 129-139, doi:10.5194/os-7-129-2011.
- 26 Mauritsen, T., J. Sedlar, M. Tjernström, C. Leck, M. Martin, M. Shupe, S. Sjögren, B. Sierau, P. O. G. Persson, **I. M. Brooks**, E. Swietlicki, 2010: An Arctic CCN-limited cloud-aerosol regime. *Atmos. Chem. Phys.* **11**, 165–173, doi:10.5194/acp-11-165-2011.
- 25 Sedlar J.; M. Tjernström; T. Mauritsen; **I. M. Brooks**; C. E. Birch; M. Shupe; A. Sirevaag; P. O. G. Persson; C. Leck, 2011: A transitioning Arctic surface energy budget: the impacts of solar zenith angle, surface albedo and cloud radiative forcing. *Climate Dynamics*, **37**, 1643-1660, doi: 10.1007/s00382-010-0937-5

2010

- 24 O'Connor, E. J., A. J. Illingworth, **I. M. Brooks**, C. D. Westbrook, and R. J. Hogan, F. Davis, B. J. Brooks, 2010: Balloon-borne in-situ evaluation of a fast method for estimating dissipation rate from a vertically-pointing Doppler lidar, *J. Atmos. Oceanic. Tech.* **27**, 1652-1664. doi: 10.1175/2010JTECHA1455.1.

2009

- 23 Birch, C. E., **I. M. Brooks**, M. Tjernström, S. F. Milton, P. Earnshaw, S. Söderberg, P. O. G. Persson, 2009: The performance of a global and mesoscale model over the central Arctic Ocean during late summer. *J. Geophys. Res.* **114**, D13104, doi:10.1029/2008JD010790.
- 22 **Brooks, I. M.**, M. J. Yelland, R. C. Upstill-Goddard, P. D. Nightingale, S. Archer, E. d'Asaro, R. Beale, C. Beatty, B. Blomquist, A. A. Bloom, B. J. Brooks, J. Cluderay, D. Coles, J. Dacey, M. DeGrandpre, J. Dixon, W. M. Drennan, J. Gabriele, L. Goldson, N. Hardman-Mountford, M. K. Hill, M. Horn, P.-C. Hsueh, B. Huebert, G. de Leeuw, T. G. Leighton, M. Liddicoat, J. J. N. Lingard, C. McNeil, J. B. McQuaid, B. I. Moat, G. Moore, C. Neill, S. J. Norris, S. O'Doherty, R. W. Pascal, J. Prytherch, M. Rebozo, E. Sahlee, M. Salter, U. Schuster, I. Skjelvan, H. Slagter, M. H. Smith, P. D. Smith, M. Srokosz, J. A. Stephens, P. K. Taylor, M. Telszewski, R. Walsh, B. Ward, D. K. Woolf, D. Young, H. Zemmelenk, 2009: Physical Exchanges at the Air-Sea Interface: Field Measurements from UK-SOLAS. *Bull. Amer. Meteorol. Soc.*, **90**, 629-644. doi: 10.1175/2008BAMS2578.1
- 21 **Brooks, I. M.**, M. J. Yelland, R. C. Upstill-Goddard, P. D. Nightingale, S. Archer, E. d'Asaro, R. Beale, C. Beatty, B. Blomquist, A. A. Bloom, B. J. Brooks, J. Cluderay, D. Coles, J. Dacey, M. DeGrandpre, J. Dixon, W. M. Drennan, J. Gabriele, L. Goldson, N. Hardman-Mountford, M. K. Hill, M. Horn, P.-C. Hsueh, B. Huebert, G. de Leeuw, T. G. Leighton, M. Liddicoat, J. J. N. Lingard, C. McNeil, J. B. McQuaid, B. I. Moat, G. Moore, C. Neill, S. J. Norris, S. O'Doherty, R. W. Pascal, J. Prytherch, M. Rebozo, E. Sahlee, M. Salter, U. Schuster, I. Skjelvan, H. Slagter, M. H. Smith, P. D. Smith, M. Srokosz, J. A. Stephens, P. K. Taylor, M. Telszewski, R. Walsh, B. Ward, D. K. Woolf, D. Young, H. Zemmelenk, 2009: UK-SOLAS Field Measurements of Air-Sea

Exchange: Instrumentation. *Bull. Amer. Meteorol. Soc.*, **90**, (electronic supplement), 9-16, doi: 10.1175/2008BAMS2578.2.

2008

- 20 Weller, R. A., E. F. Bradley, J. B. Edson, C. W. Fairall, **I. M. Brooks**, M. J. Yelland, R. W. Pascal, 2008: Sensors for physical fluxes at the sea surface: energy, heat, water, salt. *Ocean Science*, **4**, 247-263.
- 19 Hill, M. K., B. J. Brooks, S. J. Norris, M. H. Smith, **I. M. Brooks**, G. de Leeuw, 2008: A Compact Lightweight Aerosol Spectrometer Probe (CLASP). *J. Atmos. Oceanic Technol.*, **25**, 1996-2006.
- 18 **Brooks, I. M.** 2008: Spatially Distributed Measurements of Platform Motion for the Correction of Ship-Based Turbulent Fluxes. *J. Atmos. Oceanic Technol.*, **25**, 2007-2017.
- 17 Norris, S. J., **I. M. Brooks**, G. de Leeuw, M. H. Smith, M. Moeman, J. J. N. Lingard, 2008: Eddy covariance measurements of sea spray particles over the Atlantic Ocean. *Atmos. Chem. Phys.*, **8**, 555-563.

2007

- 16 **Brooks, I. M.** and Alison M. Fowler, 2007: A New Measure of Entrainment Zone Structure. *Geophys. Res. Letts.*, **34**, L16808, doi:10.1029/2007GL030958.

2003

- 15 **Brooks, I. M.**, 2003: Finding Boundary Layer Top: Application of a Wavelet Covariance Transform to Lidar Backscatter Profiles. *J. Atmos. Oceanic Technol.*, **20**, 1092-1105.
- 14 **Brooks, I. M.**, S. Söderberg, and M. Tjernström, 2003: *The turbulence structure of the stable atmospheric boundary layer around a coastal headland: Aircraft observations and modelling results.* *Bound-Layer Meteorol.*, **107**, 531-559.

2001

- 13 **Brooks, I. M.** 2001: Air-sea interaction and the spatial variability of surface evaporation ducts in a coastal environment. *Geophys. Res. Letts*, **28**, 2009-2012.

2000

- 12 Pirjola, L., C. D. O'Dowd, **I. M. Brooks**, and M. Kulmala, 2000: Can new particle formation occur in the clean marine boundary layer? *J. Geophys. Res.*, **105**, D21, 26531-26546.
- 11 Noone, K. J., E. Öström, R. J. Ferek, T. Garrett, P. V. Hobbs, D. W. Johnson, J. P. Taylor, L. M. Russell, R. C. Flagan, J. H. Seinfeld, C. D. O'Dowd, M. H. Smith, P. A. Durkee, K. Nielson, J. G. Hudson, R. A. Pockalny, L. DeBock, R. Van Grieken, R. F. Gasparovic, and **I. M. Brooks**. 2000: A case study of ships forming and not forming tracks in moderately polluted clouds. *J. Atmos. Sci.*, **57**, 2729-2747.
- 10 Noone, K. J., D. W. Johnson, J. P. Taylor, R. J. Ferek, T. Garrett, P. V. Hobbs, P. A. Durkee, K. Nielson, S. Platnick, M. D. King, E. Öström, C. D. O'Dowd, M. H. Smith, L. M. Russell, R. C. Flagan, J. H. Seinfeld, L. DeBock, R. Van Grieken, J. G. Hudson, **I. M. Brooks**, R. F. Gasparovic, and R. A. Pockalny. 2000: A case study of ship track formation in a polluted boundary layer. *J. Atmos. Sci.*, **57**, 2748-2764.
- 9 **Brooks, I. M.** and D. P. Rogers, 2000: Aircraft observations of the mean and turbulent structure of a shallow boundary layer over the Persian Gulf. *Bound.-Layer Meteorol.*, **95**, 189-210.

1999

- 8 **Brooks, I. M.**, A. K. Goroch, and D. P. Rogers, 1999: Observations of strong surface radar ducts over the Persian Gulf. *J. Appl. Meteorol.*, **38**, 1293-1310.

1998

- 7 Rogers, D. P., C. Dorman, K. Edwards, **I. M. Brooks**, K. Melville, S. Burk, W. Thompson, T. Holt, L. Ström, M. Tjernström, B. Grisogono, J. Bane, W. Nuss, B. Morley, and A. Schanot, 1998: Highlights of Coastal Waves 1996. *Bull. Amer. Meteorol. Soc.*, **79**, 1307-1326.

1997

- 6 **Brooks, I. M.** and D. P. Rogers. 1997: Aircraft observations of boundary-layer rolls off the coast of California. *J. Atmos. Sci.*, **54**, 1834-1849.
- 5 Martin, G. M., D. W. Johnson, P. R. Jonas, D. P. Rogers, **I. M. Brooks**, and R. Barlow, 1997: Effects of Airmass Type on the Interaction between Cumulus Clouds and Warm Stratocumulus Clouds in the Marine Boundary Layer. *Quart. J. Roy. Meteorol. Soc.*, **123**, 849-882.
- 4 **Brooks, I. M.**, C. P. R. Saunders, R. P. Mitzewa, and C. S. Peck, 1997: The effect of rime accretion on thunderstorm charging. *Atmos. Res.*, **43**, 277-295.

1995

- 3 **Brooks, I. M.** and C. P. R. Saunders, 1995: Thunderstorm charging: laboratory experiments clarified. *Atmos. Res.*, **39**, 263-273.

1994

- 2 **Brooks, I. M.** and C. P. R. Saunders, 1994: An experimental investigation of the inductive mechanism of thunderstorm electrification. *J. Geophys. Res.*, **99**, D5, 10627-10632

1992

- 1 Saunders, C. P. R. and **I. M. Brooks**, 1992: The effects of high liquid water content on thunderstorm charging. *J. Geophys. Res.*, **97**, D13, 14671-14676.

MISCELLANEOUS PUBLICATIONS

Brooks, I. M., E. L. Andreas, G. McFiggins, M. D. Anguelova, and C. D. O'Dowd, 2011, Primary marine aerosol fluxes: progress and priorities. *Bull. Amer. Meteorol. Soc.* **92**, 4, 489–491, doi: 10.1175/2010BAMS3112.1.

Brooks, I. M., 2008: Field observations of sea spray, gas fluxes and whitecaps. *eStrategies Projects*, 62-63, December 2008, British Publishers Ltd.

Brooks, I. M., 2007: The Sea Spray Gas Flux and Whitecaps Study (SEASAW). *FluxNews - Newsletter of the World Climate Research Programme Working Group on Surface Fluxes*, Issue 4, 2007.

CONFERENCE PRESENTATIONS

INVITED PRESENTATIONS

Brooks, I. M., 2010: The Arctic Summer Cloud-Ocean Study : Field Measurements of Meteorological Processes in the Arctic Climate System. *Invited presentation : UK Polar Network workshop on "Investigating Variability in Polar Climates: Past, Present and Future"*, April 8-9, Leeds University.

Brooks, I. M., 2006: Measuring physical exchanges: sea spray, wave-breaking and whitecap production. *Challenger Conference for Marine Science. September 11-15, 2006, Oban.*

2012

94. Shupe, M. D., P. O. G. person, A. Solomon, **I. M. Brooks**, G. Canut, 2012: Turbulence Profiles and Cloud-Surface Coupling in Arctic Stratiform Clouds, *DOE Atmospheric System Research Programme Science Meeting, 12-16 March, 2012, Arlington, Virginia, USA.*

93. Williams, N. J., W. M. Drennan, H. C. Graber, R. J. Ramos, **I. M. Brooks**, S. J. Norris, D. Sproson, 2012: air-sea measurements from moored surface buoys in the pacific during the 2010 typhoon season. *AGU Ocean Science Meeting, 20-24 Feb. 2012, Salt Lake City, Utah, USA.*

2011

92. Tupman, D., **I. M. Brooks**, S. J. Norris, M. J. Yelland, R. W. Pascal, B. I. Moat: 2011: Wave Breaking Effects on the Air-Sea Exchange of Carbon Dioxide. *ESA/SOLAS/EGU Conference: Earth Observation for Ocean-Atmosphere Interactions Science, 29 Nov.-2 Dec. 2011, Frascati, Italy.*

91. Salisbury, D., **I. M. Brooks**, M. Anguelova, S. J. Norris 2011: Remote Sensing of Whitecap Coverage for Sea-Spray Aerosol Flux Parameterizations, *ESA/SOLAS/EGU Conference: Earth Observation for Ocean-Atmosphere Interactions Science, 29 Nov.-2 Dec. 2011, Frascati, Italy.*

90. Sproson, D. **I.M. Brooks**, S. J. Norris, W. M. Drennen, N. Williams, H. Graber, R. Ramos, and J. Gabriele, 2011: Impact of sea spray on air-sea fluxes in Typhoon conditions, *ESA/SOLAS/EGU Conference: Earth Observation for Ocean-Atmosphere Interactions Science, 29 Nov.-2 Dec. 2011, Frascati, Italy.*

89. **Brooks, I. M.**, A. Held, C. Leck, M. Tjernström, S. J. Norris, G. de Leeuw, A. Sirevaag, C. E. Birch, B. J. Brooks, 2011: Bubble and aerosol fluxes in and over leads in Arctic sea ice: results from ASCOS. *UK Arctic Science Conference, 14-16 Sept. Leeds, UK.*

88. Pleavin, T. D., **I. M. Brooks**, J. S. Dobbie, M. Shupe, P. O. G. Persson, M. Tjernström, B. J. Brooks, 2011: Large Eddy Simulations of Arctic Stratus: ASCOS case studies. *UK Arctic Science Conference, 14-16 Sept. Leeds, UK.*

87. Birch, C. E., **I. M. Brooks**, P. Earnshaw, C. Leck, A. Lock, T. Mauritsen, S. F. Milton, P. O. G. Persson, J. Sedlar, M. Shupe, and M. Tjernström, 2011: Modelling the vertical structure of the central Arctic boundary layer: ASCOS case studies. *UK Arctic Science Conference, 14-16 Sept. Leeds, UK.*

86. Canut, G., **I. M. Brooks**, P. O. G. Persson, M. Shupe, M. Tjernström, T. Mauritsen, J. Sedlar, and C. E. Birch, 2011: Boundary layer structure during ASCOS – Multi-sensor retrievals and diagnostics. *UK Arctic Science Conference, 14-16 Sept. Leeds, UK.*

85. Birch, C. E., **I. M. Brooks**, P. Earnshaw, C. Leck, A. Lock, T. Mauritsen, S. F. Milton, P. O. G. Persson, J. Sedlar, M. Shupe, and M. Tjernström, 2011: Modelling the vertical structure of the central Arctic boundary layer : ASCOS case studies, *IUGG Conference, 28 June – 7 July, Melbourne, Australia*

84. Canut, G., **I. M. Brooks**, P. O. G. Persson, M. Shupe, M. Tjernström, T. Mauritsen, J. Sedlar, and C. E. Birch, 2011: Boundary layer structure during ASCOS – Multi-sensor retrievals and diagnostics, *AMS 11th Conference on Polar Meteorology and Oceanography, 2-5 May, Boston, MA, USA.*

83. Birch, C. E., **I. M. Brooks**, P. Earnshaw, C. Leck, A. Lock, T. Mauritsen, S. F. Milton, P. O. G. Persson, J. Sedlar, M. Shupe, and M. Tjernström, 2011: Modelling the vertical structure of the

central Arctic boundary layer : ASCOS case studies, *AMS 11th Conference on Polar Meteorology and Oceanography*, 2-5 May, Boston, MA, USA.

82. Pleavin, T. D., **I. M. Brooks**, J. S. Dobbie, M. Shupe, P. O. G. Persson, M. Tjernström, B. J. Brooks, 2011: Large Eddy Simulations of Arctic Stratus: ASCOS case studies, *AMS 11th Conference on Polar Meteorology and Oceanography*, 2-5 May, Boston, MA, USA.
81. **Brooks, I. M.**, A. Held, C. Leck, M. Tjernström, S. J. Norris, G. de Leeuw, A. Sirevaag, C. E. Birch, B. J. Brooks, 2011: Linking the Arctic Ocean and clouds - bubble and aerosol flux measurements from ASCOS, *AMS 11th Conference on Polar Meteorology and Oceanography*, 2-5 May, Boston, MA, USA.
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