

Gaël Durand

Institut des Géosciences de l'Environnement (IGE)

UGA-IGE, CS 40700, 38058 Grenoble Cedex 9

Date of birth: 1977/11/19

Citizenship: French

Tel: +33 (4) 76 82 42 35

gael.durand@univ-grenoble-alpes.fr

www.gaeldurand.fr



Field of Expertise

Ice flow modelling, dynamics of polar outlet glaciers, contribution of ice sheets to sea-level rise, ocean / ice sheet interaction, ice anisotropy.

Academic titles and appointments

June 2015 Habilitation à diriger des recherches, University Grenoble-Alpes. France.

Dynamics of outlet glaciers: from processes to projections

Since Oct. 2009 Research Scientist IGE (UMR5001), France.

Ice flow numerical modelling, ice-sheet and ice-shelves interactions.

2007-09 Postdoc, LGGE, France

Local ice flow numerical modelling, ice-sheet and ice-shelves interactions.

2005-07 Postdoc, Niels Bohr Institute, University of Copenhagen, Denmark

Crystal anisotropy along polar ice cores: measurement and consequences on ice flow.

2001-04 PhD, LGGE, obtained with distinction (supervisor: Doctor J. Weiss)

Microstructure, recrystallization and deformation of polar ice along the EPICA dome C core.

2000-01 Master2 obtained with distinction at University Joseph Fourier - Grenoble I

Laboratory work at LGGE: *Microstructure of the EPICA Dome C ice core.*

Communications

51 peer reviewed publications (rank A). H index: 22 (Easy Web of Knowledge, March 2018)

12 solicited oral communications, > 140 communications during international conferences

9 outreach conferences, regular contact with media (~1/month)

5 significant publications (supervised PhDs and postdocs underlined):

Jourdain, N.C., Mathiot, P., Merino, N., Durand, G., et al. (2017). Ocean circulation and sea-ice thinning induced by melting ice shelves in the Amundsen Sea. *J. Geophys. Res. – Ocean*, 122(3), 2550-2573.

Fürst, J., Durand, G., Gillet-Chaulet, F., Merino, et al. (2016). The safety Band of Antarctic ice shelves. *Nature Climate Change*, 6(5), 479-482.

Ritz, C., Edwards, T., Durand G., Payne, A., Peyaud, V. and Hindmarsh, R. (2015). Potential sea level rise from Antarctic ice sheet instability constrained by observations. *Nature*. 528(7580).

Durand G., Pattyn, F. (2015). Reducing uncertainties in projections of Antarctic ice mass loss. *The Cryosphere*, 9, 2043-2055.

Favier L., Durand G., Cornford S.L., Gudmundsson G.H., et al. (2014). Irreversible retreat of Pine Island Glacier owing to topographic-induced instability. *Nature Climate Change* 4, 117-121.

Supervisory activities

Mentored three recruitments of research scientists at CNRS

J. Mouginot (2017), F. Gimbert (2015) and N. Jourdain (2013)

Postdocs

2014-2015 J. Fürst - modelling buttressing of ice shelves (2 publications)

2009-2013 L. Favier - modelling grounding line dynamics (2 pub.)

PhD

2013-2016 I. Merino - ice/ocean interactions in the context of future ice-sheet/ocean coupled models (2 pub.)

2011-2014 J. Krug - Polar ice sheets/ocean interactions: modelling calving of outlet glaciers (2 pub.)

2009-2012 A-S. Drouet - Dynamics of outlet glaciers: from processes to applications on the Astrolabe glacier (1 pub.)

Master 2

2016 M. Donat-Magnin - Role of changes in atmosphere and ice flow onto sub ice shelf melt in the Amundsen Sea

2013 I. Merino - A new inverse method to initialize ice flow models

2013 C. Mosbeux - Modelling the evolution of the Jakobshavn glacier

2011 J. Krug - 3D modelling of the grounding line dynamics

2011 N. Marchand - Inferring basal friction below the Greenland ice sheet

2010 A. Petrelli - A new method to infer sub ice shelf melting

2006 A. Persson - Modelling the flow induced evolution of ice fabric

2006 B. Bizet - Ice texture evolution along the NorthGRIP ice core

Teaching activities

In charge of organizing Master 1 STE research internships and evaluation (2014-2016)

Lectures: ice dynamics (Master2, 6h/yr, 2009-...), Geographical Information System (Master2, 10h/yr, 2012-2015), Mechanics (Licence1, 20h/yr, 2001-2004), Computer science (Licence1, 40h/yr, 2001-2004)

Projects

LEFE IMPHALA (2016-2017), PI, 20 k€

ANR SUMER (2013-2017), co-PI, 650 k€

LABEX OSUG@2020, SUMER (2012), PI, 8k€

TOURNESOL, grant for visits between LGGE and Université Libre de Bruxelles, PI, 4k€

Participant to: ANR TROIS-AS (2015-2019), ANR ADAGe (2009-2013), FP7 Ice2Sea (2009-2013), ANR DACOTA (2007-2011), FP6 EPICA (2000-2004)

Administration of research

Member of INSU-CSOA (2018-...)

Deputy Director of IGE (2017-...)

Deputy director of LGGE (2015-2016)

Leader of the ice flow group (EDGe) in LGGE (2012-2015)

Member of the LGGE scientific council (2012-2016)

Member of the LGGE laboratory council (2002-2004, 2011-2016)

Field missions

2008: member of the NEEM science team, NEEM, Greenland (2 months)

2003: member of the EPICA science team, Dome C, Antarctica (3 months)

Distinction

2012 EGU Outstanding young scientist award in the cryospheric science division