Dr Isabel Nias
MSci, PhD

Research Collaborator

Area of research

Contrasting dynamics and sensitivity of the Amundsen Sea ice streams

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Summary

My PhD research aims to understand the grounding line stability of fast flowing glaciers (ice streams) in the Amundsen Sea Embayment. Observation and modelling based studies of the Pine Island glacier indicate that the ocean is the main driver of the observed changes. However, it is unclear the extent to which ocean-driven change also influence other ice streams in the region, such as Thwaites and Smith glaciers. Therefore an advanced numerical model, BISICLES, will be used to investigate the dynamics of these glaciers and their sensitivity to various parameters. The project funded under NERC's iSTAR West Antarctic Ice Sheet Stability programme.

Biography

October 2013 - present:

PhD student - *School of Geographical Sciences, University of Bristol*

"Contrasting dynamics and sensitivity of the Amundsen Sea ice streams"

Funded through the NERC iSTAR Ice Sheet Stability programme

October 2007 - July 2011:

MSci Physical Geography, First Class (Hons) - *School of Geographical Sciences, Univerisity of Bristol*

Memberships

Organisations

School of Geographical Sciences

Research groups

- Bristol Glaciology Centre

Recent publications

- Edwards, TL, Brandon, MA, Durand, G, Edwards, NR, Golledge, NR, Holden, PB, Nias, IJ, Payne, AJ, Ritz, C & Wernecke, A, 2019, 'Revisiting Antarctic ice loss due to marine ice-cliff instability'. *Nature*, vol 566., pp. 58-64
- Nias, IJ, Cornford, SL, Edwards, TL, Gourmelen, N & Payne, AJ, 2019, 'Assessing uncertainty in the dynamical ice response to ocean warming in the Amundsen Sea Embayment, West Antarctica'. *Geophysical Research Letters*.
- Nias, IJ, Cornford, SL & Payne, AJ, 2018, 'New Mass-Conserving Bedrock Topography for Pine Island Glacier Impacts Simulated Decadal Rates of Mass Loss'. *Geophysical Research Letters*, vol 45., pp. 3173-3181

- Nias, IJ, Cornford, SL & Payne, T, 2016, 'Contrasting the modelled sensitivity of the Amundsen Sea Embayment ice streams'. *Journal of Glaciology*, vol 62., pp. 552-562

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