

# Glaciology of the Bottleneck, Amery Ice Shelf

Max Lurie [max.lurie@umit.maine.edu](mailto:max.lurie@umit.maine.edu)

*Department of Earth Sciences  
Climate Change Institute  
University of Maine  
Orono, ME 04469*

The geology of the Amery Ice Shelf is located at the head of Pyrdz Bay in MacRobertson Land in Eastern Antarctica. It is fed from the Lambert Glacier which drains a large portion of the East Antarctic Ice Sheet. The present state of this system is used to model drainage of the EAIS, through the bottleneck created by two wide gaps in the Transantarctic Mountains, in the event of WAIS collapse. Using satellite imagery of surface and bed topography we reconstructed the parabolic curve of the EAIS according to the furthest extent of its grounding line. The calculated floating fraction ( $\phi = h_o/h_i$ ) for flow lines both before and after collapse model ice-bed coupling in the Lambert Glacier ice shed. This provides insight to the stability of the region and serves to illustrate a potential collapse of the Bottleneck region. Collapse of which could cause a sea level rise of 2.3 and 4.7 for the Amery and Bottleneck drainage basins.