

In defense of ice mélange

Jason Amundson

University of Alaska Southeast

[jason.amundson@uas.alaska.edu](mailto:jason.amundson@uas.alaska.edu)

Many fjords in Greenland contain a dense pack of icebergs and brash ice (i.e., ice mélange) for at least part of the year. A strong correlation between mélange mobility and glacier terminus behavior suggests that ice mélange is capable of inhibiting iceberg calving by exerting back forces on the glacier termini. The magnitude and variability of these forces are almost entirely unconstrained, making it unclear whether ice mélange can significantly affect glacier stability. Initial studies of ice mélange have primarily focused on trying to assess its impact on iceberg calving and glacier stability; however, ice mélange can also affect the glacier-fjord system in ways that are only just being recognized. Furthermore, ice mélange is a unique material that can potentially provide insights into condensed matter physics and planetary science. In this presentation I will give an overview of the current state of our understanding of ice mélange, discuss some of the new methods and tools that are giving us insights into ice mélange behavior, and suggest avenues for future research that extend beyond the initial goal of trying to determine how/if ice mélange affects glacier stability.