

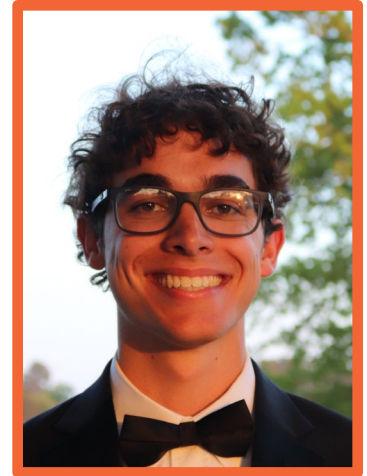
Graduate Student Research Seminar

Spring 2025

Tabletop experiments of tsunami generation in ice-choked fjords using granular particles

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Advisor: Joshua Bostwick



Monday, March 3rd

3:00 pm (EST) – 132 Fluor Daniel Building

Abstract

The focus of this study is on tsunami formation from glacial calving events, which often occur in fjords in the Arctic region that are covered with a poly-disperse granular material called ice mélange. Such tsunamis are generated in a laboratory environment by collapsing a column of non-buoyant granular material into a body of water with a layer of buoyant particles distributed across the surface as a model of ice mélange. The intent is to model wave formation in the ice-choked fjords. This project explores a range of glacial calving geometry, water depths, and ice mélange particle sizes to gain a greater understanding into the role of ice mélange on wave formation and propagation. In-depth analysis and comparison to the literature have revealed that the ice mélange layer has a significant impact on the wave morphology and breaking regimes, as well as the length of the final deposit of non-buoyant granular material.



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