

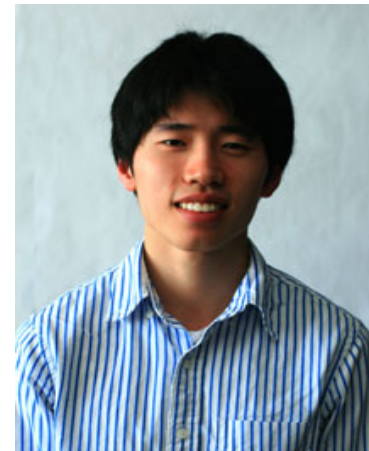
Di Lin

Electrical Engineering, IT, 2008

Mentor: Joey Talghader, Electrical Engineering

Optical Probing of Glacial Ice: Single Bubble Characterization using Laser-Light Scattering

Much of Earth's past climate is buried and preserved in the glacial ice sheets of Greenland. Scientific endeavors have successfully extracted over two miles of ice cores from these ice sheets, allowing us to start interpreting the historical information they contain. One study involves measuring the amount of air trapped inside the ice cores through laser-light scattering (LLS). My project will explore the application of Mie theory in LLS methods as well as polarization effects in order to characterize the LLS behavior of single air bubbles (of varying size and shape). This type of characterization will provide valuable data for simulations that can be used for estimating overall air density in ice core samples consisting of a large number of bubbles. Observing the amount of air trapped inside ice cores allows us to profile ice density in terms of depth while the characterization of bubble shape allows us to compute the amount of stress exerted on the ice due to ice flow.



Poster Number: Session: