



Iceberg: A Remote Sensing Story

(Applications of microwave scatterometers for observation of polar ice)



David G. Long

Professor

Brigham Young University, Provo, UT

2:30 p.m – 3:30 p.m. | Fri., December 14, 2018 | EECS 3316

Abstract: Recent developments in new satellite-based radar sensors and computer processing techniques offer unique perspectives of our planet. Using data from a satellite radar scatterometer that measures the microwave scattering properties of the surface, the near-surface wind over the ocean can be inferred. The scatterometer measurements can also be used over land to study deforestation of tropical rain forest and desertification. Over the glaciated regions of Greenland and Antarctica, the radar signal is very sensitive to melting conditions and can thus be used to monitor global warming conditions. The contrast between ocean and ice scattering enables tracking of major icebergs around Antarctica regardless of the weather or solar illumination conditions. Radar scatterometers are now essential tools for iceberg tracking and have provided an important clue about climate change. The story of finding a lost Rhode-Island-sized iceberg from a spacecraft is presented, along with recent results in monitoring sea ice.

Bio: Dr. Long is a Professor in the Electrical and Computer Engineering Department at Brigham Young University. He is the Director of the BYU Center for Remote Sensing and head of the Microwave Earth Remote Sensing (MERS) Laboratory. He is the Principal Investigator for a number of NASA-sponsored research projects in microwave remote sensing. Previously, he worked for NASA/Caltech's Jet Propulsion Laboratory where he was responsible for the design and development of various spaceborne radar systems.