



The ‘dark’ side of the Greenland Ice Sheet: 2009 updated long term melting trends, remotely controlled boats on supraglacial lakes and cryokonite holes.

Marco Tedesco (1)

(1) CCNY-CUNY, Earth And Atmospheric Sciences, NY, United States (mtedesco@sci.cuny.cuny.edu), (2) JCET - NASA GSFC, Greenbelt, MD, USA

In this talk I will report recent results from different projects concerning melting over the Greenland Ice Sheet.

In particular, I will focus on three aspects: first, I will show results updating the long-term melting trends (1979 – 2009) derived with spaceborne satellite data will discuss the 2009 melting season.

Second, I will present results of an experiment aiming at improving the monitoring of supraglacial lakes from visible and near-infrared satellite data and will present seasonal trends of these surface features. At the beginning of July 2009, we collected lake depth data and satellites-like data to evaluate satellites products used to study supraglacial lakes and improve monitoring techniques. We used a remotely controlled boat equipped with a GPS, fishfinder, spectrometer and microcomputer to collect these data.

Third, while on the ice sheet, we also collected samples of cryoconite (that dark powdered material responsible for dark holes in the ice). I will report the results of preliminary analysis of this material by using Scanning Electronic Microscopy (SEM, for analyzing the composition) and a spectrometer (to characterize the visible and near-infrared properties).

The following people contributed to the results here reported: Nick Steiner (CUNY), M. Jenkins (National Geographic), X. Fettweis (University of Liege), Adam Lewinter and James Balog (Extreme Ice Survey), Gina Stovall and Gordon Green (CCNY).

The World Wildlife Foundation (WWF) and Martin Sommerkorn are deeply acknowledged for the financial support provided for the experiment.