

Monitoring snow characteristics and the evolution of ground temperatures at Black Rock Forest: adding capacity to the Snow Research Station

Jessie Cherry and Jason Smerdon

email: jcherry@ldeo.columbia.edu

Columbia University/Lamont-Doherty Earth Observatory

Collaborators: Bruno Tremblay (LDEO, PI), Bill Schuster (Black Rock Forest), Allan Frei (Hunter College, CUNY), Gavin Gong (CU, DEEE), David Robinson (Rutgers), Anthony Carpi (John Jay, CUNY), Simon Gruber (Environmental Services)

ABSTRACT

A dual-use snow research station has been in operation since the summer of 2005. It was first deployed by Cherry and Tremblay on an ice floe in the Laptev Sea during 2005, as part of the NABOS cruise aboard the I/B Kapitan Dranitsyn. The equipment is now installed at Black Rock Forest (BRF) for use during the 2005-2006 snow season. Monitoring and modeling snow at BRF is important for water resource planning in Orange County, NY. Prior support from the LDEO Climate Center has helped build several basic elements of the snow research station and has aided in instrument deployment. The current proposal seeks to expand the present utility and capacity of the research station by: 1) completing the communication infrastructure needed to remotely manage the station using data telemetry; and 2) adding additional snow sensors as well as equipment for monitoring soil temperatures. As the number of participating researchers grows at BRF, data telemetry would allow timely and efficient access to the data for all of the research participants. Additional snow sensors will improve the quality of snow monitoring at BRF, while soil temperature measurements are a natural extension of the observations at the site and will allow many additional research questions to be addressed. A future proposal to a state agency is planned to secure funds for further support and maintenance of the station, and to help fund an annual science meeting.