Geophysical Research Abstracts
Vol. 20, EGU2018-6983, 2018
EGU General Assembly 2018

A study on the elevation of Amery Ice Shelf using SAR Interferometry method

Bingjie Wang and Xiao Cheng

State Key Laboratory of Remote Sensing Science, and College of Global Change and Earth System Science, Beijing Normal University, Beijing, China

High resolution surface topography DEM is a basic parameter of ice shelf, which plays an important role in mass and energy balance and can be the sensitive indicator and regulator to climate change. Since the ice shelf surface is usually lack of surface texture and moving fast, traditional technologies, like satellite altimetry, and stereographic photogrammetry usually cannot get reliable surface topography information over ice shelf. In this study, a good coherence DEM map was achieved by cross interferometric method using ERS-2 and ENVISAT SAR data with very short time interval. The result shows that this technology could well suppress temporal decorrelation and reduce the errors caused by ice shelf motion, which is quite useful in the extraction of the microtopography in the Amery Ice Shelf with high accuracy, such as the ice rise and crevasses.