

Ice dynamics of union glacier from SAR offset tracking

Gomez, Rodrigo

Arigony-Neto, Jorge

De Santis, Angela

Vijay, Saurabh

Jaña, Ricardo

Rivera, Andres

© 2018 Elsevier B.V. The Antarctic ice sheet is predicted to be the major contributor to sea-level rise during the XXI century. Therefore, monitoring ice dynamics of outlet glaciers in Antarctica is of great importance to assess future sea-level rise predictions. Union Glacier is one of the major outlet glaciers of the Ellsworth Mountains and drains into the Ronne-Filchner Ice Shelf. Glaciers can be studied using remote-sensing techniques, which combined with field measurements can deliver a good approximation of its dynamics and can be used as input for glacier models. In this study we acquired high resolution Stripmap HIMAGE SAR images from the COSMO-SkyMed satellite constellation during austral summer of 2011?2012, and applied a SAR offset tracking algorithm to compute ice velocities. Then, we compared our derived velocities with field data already published. Results showed mean values of ice velocity estimated for the main trunk of the glacier are 0.043 (0.0393 SD) m d⁻¹, with va