

Séminaire

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Salle Louis Liboutry, LGGE

Mauro A. Werder
University of Bristol, Royaume-Uni

GlaDS, a 2D subglacial drainage system model

Subglacial hydrology plays a key role in ice dynamics by modulating basal sliding speed. However, until recently the subglacial drainage system could not be simulated well as no models were able to capture the interplay of channelised and distributed drainage in 2D.

GlaDS is a state of the art 2D subglacial hydrology model which incorporates both distributed and channelised drainage; in particular, the channel system is generated as part of the model solution. I will introduce the model physics and numerics. Then I present model applications to synthetic topographies, Gornergletscher and Jakobshavn Isbrae and discuss implications for ice dynamics. I will end with some results of a new implementation of GlaDS with the Elmer/Ice framework.