



Inter-comparison of subglacial hydrological models

Basile de Fleurian (1) and Mauro Werder (2)

(1) University of Bergen, Earth Science, Bergen, Norway (Basile.DeFleurian@uib.no), (2) ETH Zurich, VAW, Zurich, Switzerland (werder@vaw.baug.ethz.ch)

The recent emergence of a number of subglacial hydrological models allows us to obtain theoretical insights on basal processes; for instance on the coupling between water pressure and the sliding of glaciers. In ice-flow models, it is relatively clear what the simulated physics ought to be. Conversely, the physical processes incorporated into subglacial hydrology models are diverse as it is yet unclear which ones are of relevance for a particular setting. An inter-comparison of hydrology models will therefore need a somewhat different approach to the one used in the many ice-flow model inter-comparisons (EISMINT, ISMIP, etc.).

Here, we present a set of experiments that will allow the comparison of the behavior of different hydrology models. The design of the benchmark aims at allowing the participation of a wide range of models based on different physical approaches. We aim at evaluating the models with a focus on the effective pressure which has the most impact on the dynamics of glaciers. The aim of this inter-comparison is to provide modellers with the necessary data to make an informed decision on which subglacial hydrology model to use for a particular study.