

Report on a proposal for a CliC sponsored ice sheet model intercomparison activity

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In the margin of the 'International Symposium on Physical and Mechanical Processes in Ice in relation to Glacier and Ice-sheet modeling', organised by the IGS (International Glaciological Society) in Chamonix, a preliminary meeting was held on August 27th to discuss a restart of the EISMINT (European Ice Sheet Modeling Initiative) model intercomparison activity, which dominated the subject during much of the nineties. About 20 people participated in this meeting, probably representing over half of the worldwide ice-sheet modeling community. To set the stage, I presented the same proposal which was tabled at the ACSYS/CliC NEG-OPP meeting in Cambridge in september 2001.

The response of the community was very positive and the need was indeed felt to have a new structure within which new developments in ice-sheet modeling could be discussed, newly developed codes could be tested, and new benchmarks for intercomparison purposes could be designed. The proposal to carry on this activity under the CliC flag was well received. From past experience some reservations concerning the availability of adequate manpower to coordinate the activity and sufficient funds for travel support for participants were raised, but the decision was taken to go ahead as it was clearly felt that it would benefit the community.

We decided to go for the same format as before and appoint two co-ordinators for a specific model intercomparison subject. To start with, it was decided to concentrate on two specific topics relevant to modeling the Antarctic ice sheet, and which are closely aligned with recent model developments:

- Intercomparison of 3-D higher order models, with relevance to modeling zones of large gradients such as ice streams and the detailed flow around bore holes, to be coordinated by Dr. Frank Pattyn (Vrije Universiteit Brussel) and Dr. Tony Payne (University of Bristol).
- Intercomparison of grounding-line treatments, that is, the coupling of ice sheets and ice shelves in dynamic situations, to be coordinated by Dr. Philippe Huybrechts (Vrije Universiteit Brussel/ Alfred-Wegener-Institut Bremerhaven) and Dr. Catherine Ritz (LGGE Grenoble).

The wish was also expressed to make contact with the PMIP group in view of investigating the use of ice-sheet models for an initiation experiment on the last glacial cycle. It was agreed that this item will be taken up by Dr. Ayako Abe-Ouchi (University of Tokyo) and Dr. Catherine Ritz (LGGE Grenoble).

To get the two intercomparison topics mentioned above going, we decided it would be necessary to hold a first coordination meeting within the next 6 to 9 months. Participants should be the 4 coordinators mentioned above plus one or two invitees with a strong theoretical background in the fundamentals of glacier flow. During that meeting the set-up of the experiments should be discussed. Two days would be the right format for such a meeting. It was suggested to hold the meeting in a central location such as Brussels, which would minimise costs as two participants would not need any travel support, and the other participants would have easy access from France and the UK. A request for full funding to ACSYS/CliC for that meeting should not exceed 3000 €. The possibility was also discussed to have intermediary meetings in the margin of other large conference such as the EGS General Assembly in Nice.

After protocols for the experiments have been created, the intercomparison activity could largely take place via the Internet. Also new experiments could be created in the course of the activity via the web if required.

To make this activity a success, the intercomparison venture should be concluded with a larger workshop bringing together all the participants to discuss the results. This would encompass a group of about 30 scientists. Funding for such an activity is required as its success is anticipated to depend largely on the stimulus to attend such a meeting, preferably to be held in an attractive location. It should therefore be investigated how the endorsement by CliC might be used to our advantage to convince organisations to put up the necessary funds.