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Dear Ian Rutt

Re Shared frameworks for next generation ice sheet modelling

Thank you for alerting me to your proposed new work in which I am very interested. I will be happy to participate as an ISM user, in part to help out, but also because my own research activities would benefit enormously from improvements to GLIMMER-CISM, better coupling and the development of training resources. My empirical research on palaeo ice sheets (in Canada, UK and Ireland and far NE Russia) has now moved to a phase where I need to run model simulations in order to address the next questions. I am grateful for your help thus far on modelling the surface geometry of the last British-Irish Ice Sheet for the purpose of predicting the location of subglacial lakes (re NERC Fellowship to Stephen Livingstone), and also for the commitment to assist with an improved GLIMMER-CISM on our recent NERC consortium grant proposal (Clark et al) on constraining ice losses when ice sheets undergo the marine- to terrestrial-terminating transition. I hope that once your project is funded my use of the model can widen and I am particularly interested in inclusion of the higher order physics and the provision of training resources. In my case it is common that our research requires model simulations, but to be executed by a PhD student or postdoc who is not wholly a modeller (they have many other data related tasks) and I can see a large increase in uptake in ISMing from my own research group and more broadly if it can be opened up to a wider expertise.

The overall approach seems apt and timely and chimes well with an ongoing project I have in Far NE Russia where I have geomorphological evidence for a large palaeo ice sheet, but the climate at the time is supposedly too dry to properly nourish one. An ISM-GCM coupled model is exactly what is required to shed light on this conundrum, but of course beyond my own expertise. The work you propose should allow me to proceed in this direction.

As a non-modeller I strongly support the notion of interchangeability and flexibility between models, so that we can be sure we are using the most appropriate tool rather than just getting locked into an approach by mere history of who one first chooses to collaborate with. I wish you the best of luck with the proposal and look forward to working on it with you.

Yours Sincerely

Professor Chris Clark
Sorby Chair of Geoscience