



Ice2sea – the future glacial contribution to sea-level rise

D. G. Vaughan and The Ice2sea Consortium

British Antarctic Survey, Cambridge, United Kingdom (d.vaughan@bas.ac.uk)

The melting of continental ice (glaciers, ice caps and ice sheets) is a substantial source of current sea-level rise, and one that is accelerating more rapidly than was predicted even a few years ago. Indeed, the most recent report from Intergovernmental Panel on Climate Change highlighted that the uncertainty in projections of future sea-level rise is dominated by uncertainty concerning continental ice, and that understanding of the key processes that will lead to loss of continental ice must be improved before reliable projections of sea-level rise can be produced. Such projections are urgently required for effective sea-defence management and coastal adaptation planning.

Ice2sea is a consortium of European institutes and international partners seeking European funding to support an integrated scientific programme to improve understanding concerning the future glacial contribution to sea-level rise. This includes improving understanding of the processes that control, past, current and future sea-level rise, and generation of improved estimates of the contribution of glacial components to sea-level rise over the next 200 years. The programme will include targeted studies of key processes in mountain glacier systems and ice caps (e.g. Svalbard), and in ice sheets in both polar regions (Greenland and Antarctica) to improve understanding of how these systems will respond to future climate change. It will include fieldwork and remote sensing studies, and develop a suite of new, cross-validated glacier and ice-sheet model. Ice2sea will deliver these results in forms accessible to scientists, policy-makers and the general public, which will include clear presentations of the sources of uncertainty. Our aim is both, to provide improved projections of the glacial contribution to sea-level rise, and to leave a legacy of improved tools and techniques that will form the basis of ongoing refinements in sea-level projection. Ice2sea will provide exciting opportunities for many early-career glaciologists and ice-modellers in a variety of host institutes.