PREFACE

This issue of the *Annals of Glaciology* presents a wide variety of papers covering the contribution of glaciers and ice sheets to sea-level change: observations, modelling and prediction. Glaciers and ice sheets in a warming climate are expected to present an increasing contribution to sea-level rise. While observations at the interface between the cryosphere and both ocean and atmosphere have considerably increased our understanding of the complex coupling between these systems, major uncertainties remain. These uncertainties essentially pertain to estimating the present-day mass balance of glaciers and ice sheets and to predicting future cryospheric changes using ice-flow models. Ice-flow models have greatly improved over the last few years, but essential processes such as basal hydrology and calving remain strongly parameterized. Initiatives to couple ice-flow models to ocean and/or atmosphere models have emerged, but the process of integrating remains challenging. This issue of the *Annals of Glaciology* seeks to address these problems.

Given the wide scope of the subject, all 23 papers in this issue share a common denominator: establishing the state of the cryosphere in terms of mass balance of glaciers, ice caps and ice sheets (both Greenland and Antarctica). The largest number of contributions (10) stem from (alpine) glaciers, covering a wide geographic domain: the European Alps, India, Scandinavia, Patagonia and tropical glaciers in the Andes. Contributions are evenly divided over mass balance and glacier modelling studies. Eight papers deal with Antarctic (4) and Greenland (4) mass-balance and ice-sheet modelling. The five remaining papers treat general mass-balance problems and ice dynamics, the latter essentially related to basal processes.

It is evident from these contributions that major efforts in understanding processes related to ice loss of glaciers and ice sheets continue to emerge since the recent publication of the fifth IPCC Assessment Report in 2013. Improvements are related to advances in glacier modelling, process-studies to improve mass-balance estimates and predictions, and basal hydrology of glaciers and ice sheets. However, contributions to ice–ocean interaction, especially in connection with the Antarctic ice sheet, are curiously lacking.

We thank the Scientific Editors for their efforts to make this issue of the *Annals* a success (Drs Guðfinna Aðalgeirsdóttir, Tamsin Edwards, Gwendolyn Leysinger Vieli, Martin Lüthi, Kerim Nisancioglu, Louise Sorensen, Shin Sugiyama, Lev Tarasov and Ralf Timmermann) as well as the many referees who helped to maintain the scientific quality of this *Annals of Glaciology* issue. Special thanks to Olivier Gagliardini for suggesting the theme of this *Annals* and for his organization of the International Symposium on Contribution of Glaciers and Ice Sheets to Sea-Level Change, held in Chamonix (France) in May 2014. We are also indebted to the International Glaciological Society office staff, Magnús Már Magnússon and Craig Baxter for their assistance in finalizing this volume.

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