

PREFACE

Radar echo-sounding of ice reveals the bed topography, the properties of the bed and the internal glacio-stratigraphy. In the 1970s and 80s the bed topography of the Antarctic and Greenland ice sheets was mapped with analogue logging devices using a relatively restricted range of frequencies. Since then, ice-penetrating radar technology has developed, extending the frequency bands to target different parts and depths of glaciers, relating electromagnetic returns to the physical properties of the ice and bed, and using radar layers in forward and inverse models of ice flow. The call for this thematic volume requested studies on all aspects of radio-echo sounding of ice and glaciers and its applications to glaciology, earth science and climate studies. This volume includes studies from shallow and deep sounding of ice; the physical interpretation of intraglacial and basal returns; snow and firn studies; the estimation of accumulation rates from radar stratigraphy; the large-scale mapping and imaging of radar layers and basal reflections; electromagnetic modelling of radar sounding and flow modelling using the results of radar sounding.

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