

## Preface

Mountain snow cover and glaciers contribute considerably to streamflow in many parts of the world, and modify runoff in terms of quantity, timing and variability. Their role is emphasized in the light of globally increasing freshwater demand and the potential impacts of future climate change. The effect of snow and ice on runoff varies between different climatic regions, such as in the Andes, European Alps or Himalayas. While, for example, in mid and high-latitude areas seasonal snow cover exerts a strong control on runoff variations, in low-latitudes glaciers provide the most dominant source of water during the dry season. Consequently, climate change is expected to trigger different responses in different climatic regimes.

Glaciological investigations in the Andean Cordillera have increased substantially in recent years. A network of glacier mass balance investigations was developed between Ecuador and Southern Patagonia in relation to meteorological and hydrological surveys. Ice core investigations were also performed in various high altitude mountains.

To address these issues, a workshop on Andean Glaciology and a symposium on the Contribution from Glaciers and Snow Cover to Runoff from Mountains in Different Climates were held during the 7th Scientific Assembly of the International Association of Hydrological Sciences (IAHS) in Foz do Iguacu, Brazil (4–9 April 2005). The workshop and the symposium were convened by the former IAHS International Commission on Snow and Ice (ICSI), which has since developed into two closely associated organisations: the International Association of Cryospheric Sciences (IACS) and the IAHS International commission on Snow and Ice Hydrology (ICSIH).

The importance of these topics was reflected in a large number of contributions to the two events, covering studies in Scandinavia, the Alps, Central and Southern Andes, Asia, North America, Greenland and Antarctica. Selected papers from these meetings have been compiled into: (i) this volume of the IAHS Red Book series, and (ii) a special issue of *Hydrological Processes* (vol. 20, issue 10).

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