

## *Preface*

### **Landslides and related phenomena: Avalanches**

In snowy mountainous areas, residents suffer from snow avalanche disasters, traffic and transport difficulties, and other various economic and psychological burdens. To overcome these problems and to realise more acceptable living conditions, substantial scientific and technical advances are needed. By increasing the scientific knowledge and developing a new and substantially more accurate generation of tools for hazard forecast and prevention, the avalanche scientific community aims to contribute to hazard assessment and reduction for settlements, traffic routes and infrastructure in avalanche prone areas.

Avalanches flows are rapid gravitational mass movements. Their triggering conditions are highly dependant upon meteorological conditions. They occur on steep slopes and have high velocities. Their dynamics depend upon the snow intrinsic properties. These properties are highly variable, and likely to change during the flow itself.

The papers included in this issue are representative of the current international research in the field of avalanches. Some articles present new progress on physical process understanding including numerical modelling, laboratory re-

sults and field measurements. Others introduce new methods for hazard evaluation using deterministic models, well documented data bases, and statistical methods.

The main objectives of this issue are:

- to gather the last scientific and technical progress in this field of research,
- to promote the exchange of results, information, scientific experiences and ideas between scientists
- to support the dissemination and transfer of technical methods. The included papers are divided into three themes related to avalanche phases:
  - avalanche formation conditions,
  - avalanche dynamics,
  - protection and hazard mitigation.

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