

# 4th Latin American SCAT Workshop

Facultad de Ciencias Físicas y Matemáticas

Universidad de Chile

Satellite School on Numerical Methods — 29 Sept. to 3 Oct. 2008

## Natural Hazards and Numerical Simulation: the case of catastrophic flows

### Lecturer:

Dr Lydie Staron, Institut Jean le Rond  
d'Alembert, Paris.

### Duration

2 hours.

### Description

The aim of the course is to give a broad overview of the use of numerical simulation for studying and predicting the behavior of catastrophic flows, with focus on the problems arising from the granular nature of these flows.

Various examples of catastrophic flows in nature will be presented, stressing the difficulty of capturing the underlying physics. We will discuss continuum modeling/simulation of such phenomena, to come up with the evidence that a better understanding of the behavior of model granular media is a prerequisite. Different experimental setups and results will illustrate the complexity of granular physics. Discrete numerical methods will then be explained in detail, and two relevant applications presented.



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