

## Numerical simulations to analyze Argentinian rock avalanches at the regional scale

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Rock and large debris avalanches are among the most hazardous phenomena at mountains and volcanoes. Their mobility can be particularly high with velocities reaching hundreds of kilometers per hour and a flowing mass carrying a strong power of destruction. In the Argentinean Andes there is a high concentration of cases history often characterized by volume of millions of cubic meters and runouts of several kilometers. The present study shows results of back-analysis of rock avalanches in this area that have similar characteristics. Simulations are carried out with VolcFlow, a depth-average approximation model. Common rheology and parameter ranges have been so defined at the regional scale. These become very important for a preliminary hazard assessment where there is a lack of field and high-resolution data and they contribute in improving our understanding of the propagation and emplacement of these flows in this area at risk.