

Modeling the potential effects of eventual fallout deposits in La Invernada basin, at the nearby area of Quizapu volcano (35.5°S)

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The Quizapu Volcano is a vent located in the Andean Southern Volcanic Zone and is known for its most violent eruption, a Plinian event in 1932, during which it ejected an estimated volume of 9.5 km³ of mostly dacitic pyroclastic fallout, dispersing eastward across South America. An eruption of such magnitude has many associated hazards related to the ejected material, including pyroclastic flows and lahars, and fallout deposition itself. Currently, two hydroelectric power plant facilities are located within a ~60 km radius and an increasing number of tourism enterprises functioning in the area, constitute new scenarios that must be involved in the analysis of volcanic hazards. Knowing how an eruption similar to the 1932 Quizapu event would affect these surroundings, if it were to happen in the future, would help to prepare civilians and local communities. The integration and modeling of existing data can be used to quantify damage caused by fallout in likely scenarios. By combining Geographic Information Systems (GIS) and digital elevation models, it is possible to constrain the quantity of material that would fall and evaluate the risk of the situation for a specific place. We present the results at nearby localities, by using isopach information to model and estimate the volume and mass of fallout that would reach and potentially alter the nearby area of La Invernada basin if a similar Plinian eruption were to happen under different conditions than in 1932, taking into consideration parameters like weather and wind direction. Information generated by this analysis in the Quizapu area can be used as a reference for future engineering projects and to create and implement contingency plans. Currently, we are carrying out analysis that will broaden our knowledge of the effects of the material ejected from a Plinian eruption.