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## Validation and operational implementation of FALL3D in DMC

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Chile is a country that has an intense volcanic activity. The volcanic chain of the Southern Andes that is located in its territory, is part of an active geotectonic boundary between the Nazca oceanic plate and continental plate of South America, where there are 91 active volcanoes. Due to inherent risk that this represent to our country and the damages they can cause in the population and aeronautics, is essential to have monitoring systems that allow real-time estimations, mainly regarding the dispersion of volcanic ash and, therefore, identify areas that could be affected by falling pyroclastic material. A tool capable of providing information to such system it is a forecasting model of dispersion, concentration and deposition of ash. The aim of this work is to implement and validate the FALL3D model (Costa, 2006), coupled to WRF, to simulate eruptive events in the Dirección Meteorológica de Chile. As a case study, linked to the validation of the model, we considered the eruption of Calbuco volcano which occurred in April 2015. We compared the ash simulation results with images obtained from MODIS data sensor, using the Prata method (Prata, 2009). In addition to that, we compared the deposited ash thickness simulation with the field measurements made by SERNAGEOMIN staff. The results obtained from this evaluation indicates that the FALL3D model reasonably simulates the main features of volcanic ash, like its dispersion and deposition. Such results are considered as a technical basis in implementing a modeling platform and operational volcanic ash dispersion forecast, in order to simulate future eruptive events that could take place in our country.