



An integrated procedure to predict volcanic ash fallout

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Prediction of volcanic ash fallout is an issue of socio-economic relevance for communities around active volcanoes that demands for adequate responses from the scientific community. Fallout models of higher complexity have emerged during the last decades. The most recent models commonly require high computational capabilities and a degree of user expertise that often prevent a wider use of models among scientists and limit the diffusion of results to other social agents involved in hazard assessment. We present a platform, under current development, that aims at joining last generation fallout models with mesoscale meteorological forecasts and a GIS in order to produce daily predictive maps of ash concentrations on air and deposit thickness. The goal is to end up with a final automatic procedure that (i) downloads mesoscale meteorological forecasts for the region of interest and interpolates to the computational domain, (ii) runs serial or parallel versions of models (initially, the platform uses Fall3D, an Eulerian model based on the advection-diffusion-sedimentation equation with turbulent diffusion given by K-theory) assuming an eruption type and, (iii) produces maps in a portable format and facilitates visualization of results through a Graphical User Interface (GUI). The final product aims to be a database constructor useful for mid-term territorial planning and an aid tool for rapid response during an episode of crisis.