## DefVolc: Interface and web service for fast computation of volcano displacement

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DefVolc is a suite of programs and a web service intended to help the rapid interpretation of InSAR data, acquired on volcanoes at an increased frequency thanks to the various dedicated satellites. Our objective is to help to rapidely inverse volcano displacements, whether these displacements result from fractures (sheet intrusions or faults) or massive magma reservoirs. These sources may have complex geometries, and they may deform simultaneously. Moreover, volcanoes are associated with prominent topographies. This makes the analysis of surface displacements complex. To appropriately analyse the InSAR displacements, we conduct inverse modelling, using 3D elastostatic boundary element models and a neighbourhood optimization algorithm . We simultaneously invert non-linear model parameters (source geometry and location) and linear model parameters (source stress changes), and further assess mean model parameters and confidence intervals. In order to speed up the setting up of inversions, we developed a users friendly graphical interface. In order to accelerate the inversions, they run on clusters. A web server is proposed to registered users in order to run the inversions on University Clermont Auvergne clusters.

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