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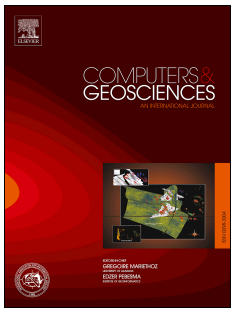

PAF: A software tool to estimate free-geometry extended bodies of anomalous pressure from surface deformation data

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PAF: A software to ol to estimate free-geometry extended bodies of anomalous pressure from surface deformation data.

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Abstract: We present a software package to carry out inversions of surface deformation data (any combination of InSAR, GPS, and terrestrial data, e.g., EDM, levelling) as produced by 3D free-geometry extended bodies with anomalous pressure changes. The anomalous structures are described as an aggregation of elementary cells (whose effects are estimated as coming from point sources) in an elastic half space. The linear inverse problem (considering some simple regularization conditions) is solved by means of an exploratory approach. This software represents the open implementation of a previously published methodology (Camacho et al., 2011). It can be freely used with large data sets (e.g. InSAR data sets) or with data coming from small control networks (e.g. GPS monitoring data), mainly in volcanic areas, to estimate the expected pressure bodies representing magmatic intrusions. Here, the software is applied to some real test cases.

Keywords: software, surface deformation, pressure sources, volcano monitoring, data inversion, geodetic modeling.