



Modelling of InSAR (LOS) changes by means of 3D extended pressured bodies with free geometry. Application to Campi Flegrei.

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InSAR measures can provide information about changes in distance between the ground and the satellite in radar line-of-sight (LOS) direction. Sometimes, as in the case of volcanic activity, the corresponding ground deformations can be modeled by means of pressure and/or mass sources. Usually, point sources and regular prolate or oblate bodies are used as source geometry for deformation. In this communication, we show a new method for non-linear inversion of position and gravity changes as produced by extended bodies with a free geometry. Their structures are described as aggregation of elemental sources with anomalous density and pressure, and they are modeled to fit the whole data and to keep some regularity conditions. A growth process permits to build general geometrical configurations. The method is tested by application to data of gravity and InSAR (LOS data for ascending and descending orbits) for the volcanic area of Campi Flegrei (Italy). Results are drawn with respect a structural gravimetric model and compared with previous models.