



## **Seafloor slow vertical displacement inferred by sea bottom pressure measurements in shallow water: an application to the Campi Flegrei volcanic area**

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The vertical component of sea floor displacement in tectonic or volcanically active areas can be observed using sea bottom pressure recorders.

These measurements are usually acquired in areas affected by strong dynamics with large vertical displacement and in deep water, where the noise induced by the sea state is low. Under these conditions the contribution of the variation of sea water density and the contribution of the instrumental drift - a typical feature of the bottom pressure recorders - can be negligible.

We have developed a new methodology to monitor vertical sea floor displacement both in areas with small and slow deformation, and in shallow water. We take advantage of bottom pressure recorder data, augmented with ancillary sea level, barometric and water physical parameters measurements.

We have applied this method to the data collected by a bottom pressure recorder deployed at 100 m w.d. in the Campi Flegrei Caldera as part of CUMAS multiparameter monitoring system. During several months of 2011 we have observed a small uplift episode related to the bradiseismic activity of the area. These observations are compatible with other geodetic data recorded in the region and provide unprecedented measurements of the vertical deformation in the marine area.