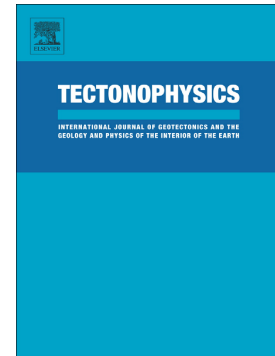


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**On the relation between ground surface deformation and seismicity during the 2012-2014  
successive magmatic intrusions at El Hierro Island**

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**Abstract**

Six different magmatic intrusions were detected around El Hierro Island in the two years that followed the end of the 2011-2012 submarine eruption. Each intrusion lasted between few days to three weeks and produced intense seismic swarms and rapid ground deformation. We performed a hypoDD relocation of more than 6,000 earthquakes and inverted the GPS data in order to obtain the location of the magma source of each intrusion. Each episode presents a spatial gap between seismicity and magma source of 3-8 km with the earthquakes located always deeper than the deformation sources. We propose a magma plumbing system consisting on a deep structure injecting magma to a more ductile shallower

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