



Defining unrest, assessing hazards and mitigating risks during the reawakening of the central volcanic complex on Tenerife, Canary Islands (2004-2007)

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Increased onshore seismic activity in April 2004 marked the first documented renewal of tectonic unrest on Tenerife, Canary Islands, Spain, since the island’s last volcanic eruption in 1909. Events included tremors, felt earthquakes and the occasional emission of a visible gas plume from the central 3718 m high Pico Teide volcano, and an increased diffuse emission of CO₂. Here, we evaluate results from seismic and microgravimetric observations in addition to other available data obtained between April 2004 and July 2005, in order to shed light on the source of these events. We discuss the information to assess whether the phenomena qualifies to be termed “volcanic unrest”, and the socio-economic implications of the phenomena, and critically examine the ensuing scientific response. We also evaluate the potential volcanic-eruption precursory character of the data. Guidelines for the establishment of so far insufficient volcano monitoring programs, early warning systems and civil response protocols for volcanic crises on Tenerife are proposed.