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Some insights on the long-period seismicity at Campi Flegrei from polarization analysis

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In this contribution we analyse long-period (LP) events and seismic noise recorded at Campi Flegrei during the uplift episode of 2005-2006. The results of a detailed polarization analysis indicate that the seismic signal recorded during the crisis is characterized by the presence of low-energy coherent wave packets that are absent in the ambient noise usually recorded in the area. The low-energy coherent wave-packets and the LP events are characterized by similar properties, namely they are radially polarized towards the LP source. On the basis of these observations, we propose a possible mechanism that could have driven the seismic crisis, and we interpret both the low-energy coherent seismic signals and the LPs in the framework of a nonlinear theory, describing the self-oscillations generated by a persistent hydrothermal source.