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Exciting (and modulating) very-long-period seismic signals on White Island, New Zealand

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Very-long-period seismic signals (VLP) on volcanoes can be used to fill the gap between classic seismology and deformation studies. In this contribution we reiterate the principal processing steps to retrieve from a velocity seismogram 3D ground displacement with tiny amplitudes far beyond the resolution of GPS. As a case study we use several seismic and infrasonic signals of volcanic events from White Island, New Zealand. We apply particle motion analysis and deformation modelling tools to the resulting displacement signals and exam the potential link between ground displacement and the modulation of harmonic tremor, in turn linked to a hydrothermal system. In this way we want to demonstrate the full potential of VLPs in monitoring and modelling of volcanic processes.