

## **TIME LAPSE MAGNETOTELLURICS: APPLICATION TO VOLCANOLOGICAL DATA**

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Time-lapse magnetotellurics aims at studying resistivity variations in the earth due to internal processes, and is especially relevant when dynamics of geophysical fluids are involved. Reliable estimates of the uncertainties of the MT parameters are essential to determine accurately the occurrence and timing of a subsurface event. We developed a new method to estimate the errors on the impedance.

We are testing the applicability of time-lapse MT on a data set acquired at Piton de la Fournaise (Reunion island) volcano in 1997-1998. The large amount of fluid involved in the eruptions leads to dynamical resistivity changes over a depth range well investigated by the data acquired at a ULF frequency  $f = 25\text{mHz}$ . Resistivities were computed each day with Chave and Thompson's RRRMT code. Results show this volcanic activity by displaying large resistivity decreases occurring during the eruption on most stations.

Time-Lapse Magnetotellurics, Volcanology, Fluids

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