

Sensitivity analysis of high conductivity anomalies in the upper mantle beneath the Society hotspot

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We obtained a three-dimensional (3-D) electrical conductivity image of the upper mantle around the Society hotspot in French Polynesia, and we have found four high electrical conductivity anomalies in the upper mantle. One of them has already been introduced in Tada et al. (2016), which is a distinct high electrical conductivity anomaly and may be continued from the transition zone up to at a depth of approximately 50 km below the sea level. Although the other conductive structures have not been mentioned in Tada et al. (2016), they are also distinct features. Besides, collaborating with results from seismic tomography (Isse et al., 2016; Obayashi et al., 2016), it is crucial to check sensitivity and validity of each anomaly. So, in this presentation, we will present detail procedures for obtaining the 3-D electrical conductivity structure and discuss what we really constrain in the 3-D structure.

Keywords: 3D inversion, marine magnetotelluric method, electrical conductivity structure, mantle plume, Society hotspot