



## **Magnetotelluric imaging of fluid processes at the Subduction Interface of the Hikurangi Margin, New Zealand**

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The northern part of Hikurangi subduction margin is an area of weak interseismic coupling and regular slow slip events occurring at shallow depth (10-15 km). Fluids contained in the subduction interface are thought to play a major role for slow slip initiation. A 3-D inversion of magnetotelluric data from 34 sites on the Raukumara peninsula shows a decrease in the conductivity of the fore-arc sediments coinciding with the onset of seismicity at ~10 km depth. Below the thick sediments, a dipping band of seismicity and intermediate conductivity at the subduction interface connects to a deeper more conductive zone above the down-going plate. This deeper conductive zone is interpreted to be under-plated sediments. These results together with results from previous seismic tomography suggest that the intermediate resistivity zone represents a region of upward fluid transport near the plate interface followed by fluid escape into the upper-plate.