

Interpretation of the LF-band fault transmission experimental results in the Nojima fault by using FDTD model calculation (II)

Motofumi Hasegawa[1]; Ichiro Tomizawa[1]

[1] Sugadaira Space Radio Obs., Univ. of Electro-Comm.

To clarify the propagation path of electric signal in the vicinity of the Nojima fault, we have done the transmission experiment in the Nojima fault from 2000 to 2004. The transmitted electric signal was measured around the fault line and the attenuation rate was relatively low along the fault in distance from the transmission point.

We have performed the model calculation using the FDTD method to explain the measured attenuation characteristics along the fault when the transmission point was placed at the depth of 390m across the fault. The calculation model is set by the vertical fault with the thickness of 30m and the calculation volume of $W240m \times V480m \times H600m$. The calculated attenuation rate at 340m is relatively close to the measured attenuation rate at the fault conductivity of 0.1S/m compared with that of 0.01S/m. It is therefore interpreted that the guiding transmission of the LF-band electric signal along the fault depends on the fault electric conductivity.