

Spatial structure of the electromagnetic noise in Awajishima

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In the middle and northern part of Awajishima Island, the Kakioka Magnetic Observatory continuously measures earth current and magnetic field from 1996. One of the purposes of the measurements is development of the efficient technique to eliminate the noise that contaminates any signals originated from crustal activities. For the first step, we investigated the spatial structure of the noise. The result of the principal component analysis of the electric potential distribution shows that the eigenvectors of the 1st and 2nd principal components represent an east-west and north-south electric field variations synchronized in the measurement area. The contribution from the leading two components exceeds 98% of the total variance.