

## Characteristic parameters of geomagnetic jerks related to mantle conductivity

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The geomagnetic jerks, which occurred in 1969, 1978, and 1991, are considered to be shortest time-scale phenomena of core origin observed on the Earth's surface. It is expected to reveal the 3-D mantle conductivity structure by investigating the jerks. We have been developing a tool using the Kalman filter that enables us to determine characteristic parameters of the jerks (amplitude, delay time, and smoothing time), which relate to the mantle conductivity. Our tool also makes it possible to estimate error levels in the optimized parameters using the Jackknife method. We obtain spatial distributions of these parameters in the cases of the 1969 and 1978 jerks by applying our tool to monthly means of the eastward component of the geomagnetic field. We also show an initial result of a forward modeling of a jerk diffusing in the conductive mantle generated at the core-mantle boundary. Our eventual goal is to construct a 3-D mantle conductivity model that can explain the spatial distributions of the characteristic parameters.