

Log-periodic modulation to power law behavior of geo-electric potential variation in the Izu island region, 2000

Haruo Tanaka[1], Seiya Uyeda[2]

[1] IFREQ, [2] Int'l Frontier Program on Earthquake Res., RIKEN

Anomalous geo-electric potential changes appeared between some electrodes on Niishima Island in the beginning of May 2000 and lasted for about 2 months. They suddenly increased at the end of June 2000 just before the onset of the major volcanic and seismic activity in the Izu island region. The sum of the magnitude of the spectral component in 0.01 [Hz] of the geo-electric potential change was analyzed. As a result, it was found that the change in the sum was well explained by a power-law behavior with a log-periodic modulation. This fact seems to suggest that a possible generation mechanism for the geo-electric potential difference variation has a hierarchical property similar to rupture in heterogeneous material.