

Denoising of Magnetotelluric Signals by Filtering

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Abstract : In this paper, we present the advances corresponding to the denoising processing of magnetotelluric signals using several filters. In particular, we use the most common spatial domain filters such as median and mean, but we are also using the Fourier and wavelet transform for frequency domain filtering. We employ three datasets obtained at the different sampling rate (128, 4096 and 8192 bps) and evaluate the mean square error, signal-to-noise relation, and peak signal-to-noise relation to compare the kernels and determine the most suitable for each case. The magnetotelluric signals correspond to earth exploration when water is searched. The object is to find a denoising strategy different to the one included in the commercial equipment that is employed in this task.

Keywords : denoising, filtering, magnetotelluric signals, wavelet transform

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