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Data Seismic Spectral Decomposition Analysis with Continuous Wavelet Transformation

Seismic data, is naturally a non-stasionary signals that have different frequencies and in the form of time. Non-stasionary signal is the seismic waves generated by elastic disturbances that propagate from one city to another, in a medium, namely the earth. Characteristics of seismic data needs to be researched and analyzed for parameters of tectonic eartquake which arrival time determination of earthquake and seismic amplitude.In this case the data used is real seismic data is Tarutung regional tectonic earthquake on May 19, 2008. Tarutung earthquake seismic signal analysis used in this study wavelet Gauss4, Mexh, Morlet, and Haar. From the analysis of seismic signals with the wavelet used, the type of wavelet Mexh show better image resolution of this type of Gaussian 4 wavelet, Morlet and Haar. The resulting scale was smaller, this means that wavelet shortened and high frequency result with the wavelet analysis of seismic signals show arrival time Mexh Primary (P) wave on the GSI range sensor 1800 ms and the maximum amplitude is localized at 2000 ms, the sensor SISI Primary (P) wave arrival time ranges from 3000 ms and the maximum amplitude is localized arround 4500 ms. Key words: non-stationary, Gauss 4, Mexh, Morlet, Haar.

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