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Random seismic noise attenuation using the Wavelet Transform

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In this paper we propose a technique of random noises attenuation from seismic data using the discrete and continuous wavelet transforms. Firstly the discrete wavelet transform (DWT) is applied to denoise seismic data. This last is based on the threshold method applied at the modulus of the DWT. After we calculate the continuous wavelet transform of the denoised seismic seismogram, the final denoised seismic seismogram is the continuous wavelet transform coefficients at the low scale. Application at a synthetic seismic seismogram shows the robustness of the proposed tool for random noises attenuation. We have applied this idea at a real seismic data of a vertical seismic profile realized in Algeria.
Keywords: Seismic data, denoising, DWT, CWT, random noise.