

Abstract :

In this paper, a tentative of noise attenuation from the 3D Ground Penetrating Radar (GPR) data using the wavelet transform and the Multilayer Perceptron neural network model is implanted. GPR data recorded in Algerian Sahara are filtered firstly using the discrete wavelet transform, after that a MLP machine with three layers is trained in a supervised learning mode, the input is an extracted profile from the raw 3D GPR data and the output consists of the GPR data of the same profile but after filtering. The estimated weights of connection are used to propagate the remaining non-filtered data through the implanted machine, the calculated output consists to the filtered GPR data. Comparison between the filtered data using the MLP machine and the continuous wavelet transform shows that the neural network machine can be used for S/N ratio improvement of the noisy GPR data.