

This paper deals with the application of Generalized Regression Neural Networks to the seismic data filtering. The proposed system is a class of neural networks widely used for the continuous function mapping. They are based on the well known nonparametric kernel statistical estimators. The main advantages of this neural network include adaptability, simplicity and rapid training. Several synthetic tests are performed in order to highlight the merit of the proposed topology of neural network. In this work, the filtering strategy has been applied to remove random noises as well as source-related noises from real seismic data extracted from a field in the South of Algeria. The obtained results are very promising and indicate the high performance of the proposed filter in comparison to the well known frequency–wavenumber filter