STATISTICAL AND NEURAL TECHNIQUES FOR PROCESSING OF NONPARAMETRIC GEOPHYSICAL MINE DATA (WedPmOR4)

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Abstract :

This paper analyzes the effectiveness of combining certain statistical techniques with a neural network to improve land mine detection. The detection method must not only detect the majority of landmines in the ground, it must also filter out as many of the false alarms as possible. This is the true challenge to developing landmine detection algorithms. Our approach combines a Back−Propagation Neural Network (BPNN) with statistical techniques and compares the performance of mine detection against the performance of simple statistical techniques such as the energy detection method and the stand−alone statistical techniques. Our results show that the combination of these techniques with a neural network improves performance over these alone.

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