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ANALYSIS & COMPARISON OF NEURAL NETWORK TRAINING ALGORITHMS FOR THE JOINT TIME-FREQUENCY ANALYSIS

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ABSTRACT

In this paper we present a comparison of Neural Network Training Algorithms for obtaining a Time Frequency Distribution (TFD) of a signal whose frequency components vary with time. The method employs various algorithms used in NNs which are trained by using the spectrograms of several training signals as input and TFDs that are highly concentrated along the instantaneous frequencies (IFs) of the individual components present in the signal as targets. The trained neural networks are then presented with the spectrogram of unknown signals. We compute the entropy as a measure of the result obtained and carry out error and time analysis to compare the performance of algorithms used.