1014-92-1637   **G. Beate Zimmer*** (`beate.zimmer@tamucc.edu`), Computing and Mathematical Sciences, Unit 582, Texas A&M University - Corpus Christi, 6300 Ocean Drive, Corpus Christi, TX 78412-5825, and **Philippe Tissot** (`philippe.tissot@tamucc.edu`) and **Alexey Sadovski** (`alexey.sadovski@tamucc.edu`). *Custom performance functions for ANN applications to coastal water level forecast.*

Feedforward Artificial Neural Networks (ANNs) are most commonly trained with the mean square error as a performance function. The backpropagation training process minimizes the Mean Square Error (MSE) between the output data and the target data. For a number of Environmental applications minimizing the probability of large prediction errors is more important than minimizing MSE. We experiment with other performance functions which intuitively seem to better reflect criteria for water level predicting models where errors below 0.15 m are within the tolerance range and errors over 0.3 m are considered outliers. We show the effects of different performance functions on the modeling behaviour of the resulting neural networks. (Received September 28, 2005)