ABSTRACT:

This paper proposes an adaptive neurofuzzy interface system (ANFIS) approach to identify the real power transfer between generators. Based on solved load flow results, it first uses modified nodal equation method (MNE) to determine real power contribution from each generator to loads. Then the results of MNE method and load flow information are utilized to train the designed ANFIS. It also incorporated an enhanced feature extraction method called principle component analysis (PCA) to reduce the input features to the ANFIS. The 25-bus equivalent system of south Malaysia is utilized as a test system to illustrate the effectiveness of the ANFIS output compared to that of the MNE method. The ANFIS output provides promising results in terms of accuracy and computation time. Furthermore, it can be concluded that the ANFIS with enhanced feature extraction method reduces the time taken to train the ANFIS without affecting the accuracy of the results.