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"Computação da Confiabilidade de Sistemas de Potência em Ambiente Competitivo Via Redes Neurais"

This dissertation presents a new methodology that may be useful under certain circumstances to assess power systems reliability in short-time horizons (operations). The conventional solution of this problem is infeasible for large scale real systems due to the extended time it requires.

The suggested methodology uses *Intelligent Computation (IC)* based techniques, focusing on *Artificial Neural Networks (ANN)*.

The proposed approach is based on off-line training of an ANN, through a set of data which represent the system behavior in different situations. The output patterns are the system reliability indices.

After training, the ANN is able to predict reliability indices for a large set of operational conditions.

The obtained results with the application of the proposed methodology on two test systems is presented.