عنوان مقاله:

Transient Stability Margin Assessment of a Power System UsingMulti-Layered Perceptron Neural Network

محل انتشار:

سومین کنفرانس بین المللی علوم و مهندسی (سال: 1395)

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خلاصه مقاله:

Online transient stability assessment of a power system is not yetfeasible due to the intensive computation involved. Artificial neuralnetworks have been proposed as one of the approaches to this problembecause of its ability to quickly map nonlinear relationships between theinput data and the output. This paper presents a methodology forestimating the normalized transient stability margin by using themultilayered perceptron neural network. The complex relationshipbetween the input variables and output variables is established by usingthe neural networks. The nonlinear mapping relation between thenormalized transient stability margin and the operating conditions of thepower system is established by using the multi-layer perceptron neuralnetwork. To obtain the training set of the neural network the potentialenergy boundary surface method along with time domain simulationmethod is used. The proposed method is applied on IEEE-9 bus systemand the results shows that the proposed method provides fast andaccurate tool to assess online transient stability

کلمات کلیدی:

Power System Stability Transient, Energy Function,Potential Energy Boundary Surface, MLP Neural Networks