Evaluation of enhancements to Thevenin equivalent based methods for real-time voltage stability assessment - DTU Orbit (05/12/2018)

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The possibilities offered by the use of Phasor Measurement Units (PMU) in real-time monitoring provide interesting ways to ensure secure operation of power systems. This paper studies the specific case of voltage stability and the possible improvements to the Thevenin equivalent methods, which is applied generally with local measurements. This paper uses the PMU measurements to calculate the grid transformation coefficients to obtain wide-area information. This is achieved by studying the generator's electromotive force estimated using values in the coefficient transformation matrix. The improvements are tested in a small system and a through comparison with traditional Thevenin equivalent methods is carried out.

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