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MODERN POWER SYSTEM ANALYSIS USING STOCHASTIC POWER FLOW

BY

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Abstract. The paper is divided into two parts. The first part presents a software instrument developed at „Politehnica" University of Timisoara, designed for probabilistic power flow analysis. The entire power system is probabilistically treated. Unexpected congestion situations can be revealed together with the scenarios that lead to these situations. The second part of the paper contains a software tool designed for power transfer distribution factors (PTDF) computing. Using the PTDFs, the change in flow on each transmission line may be computed for the change in injection at one or more buses. The IEEE 14 test power system is used as a study case.

Keywords: power system, probabilistic power flow, uncertainties, Monte Carlo simulation, PTDFs.