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Tracing Reactive Power Flow and Loss in Electric Power Systems

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Abstract

This paper suggests a systematic method to trace the reactive power flow and loss named as Proportional Tree Method (PTM). From the power flow solution, the test system is modeled conceptually like a tree, where the reactive power flow tracing is started from a particular generator to a particular line or load through the routes that connect between them. It is also possible to pinpoint the loss at each transmission line to which generator. The veracity and simplicity of the method is demonstrated by numerical examples.