

Tutorial on
STOCHASTIC PREDICTION OF VOLTAGE DIPS
FREQUENCIES AND FAULT FREQUENCIES

at PMAPS, Stockholm, Sweden, June 12, 2006

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Voltage dip frequencies and fault frequencies are strongly related as a fault in the system often leads to a dip for a number of customers. Especially industrial customers are concerned about voltage dips as they may lead to several hours of production stoppage. Whereas customers are interested in dip frequencies, network operators often have information available on fault frequencies. To allow communication between the network operator and its customers it is important to be able to link fault frequencies and dip frequencies. The most common method is to directly collect statistics on voltage dips, but the measurements are in most cases too limited in both measurement duration (at least several years are needed) and number of monitors (one for every substation would be needed. This tutorial will address alternative methods for obtaining dip frequencies and fault frequencies.

Contents:

1330: Introduction to power quality and voltage dips.

1400: Estimating dip frequency from fault frequency: method of fault positions; method of critical distances.

1500: Examples.

1530: Break.

1600: Estimating fault frequencies from lightning-flash frequency and from environmental conditions.

1700: Combining measurements and calculations.

1730: Presentation and interpretation of results: voltage-dip indices.

1800: Closure.