

Modelling Low Voltage Power Transmission Networks

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The load demand on the electricity supply causes voltage drop down its distribution network. The demand is driven by deterministic and random processes. Extreme values in the demand may result in under voltage problems for customers and current overload problems in the network.

In conjunction with Austral Engineering, a model has been developed to predict the customer load.

It takes account of diurnal, seasonal, and temperature factors together with random components to predict customer behaviours.

The current work has lead to the implementation of this model and using a Monte Carlo technique and allows the voltage and current distributions within the network to be predicted.

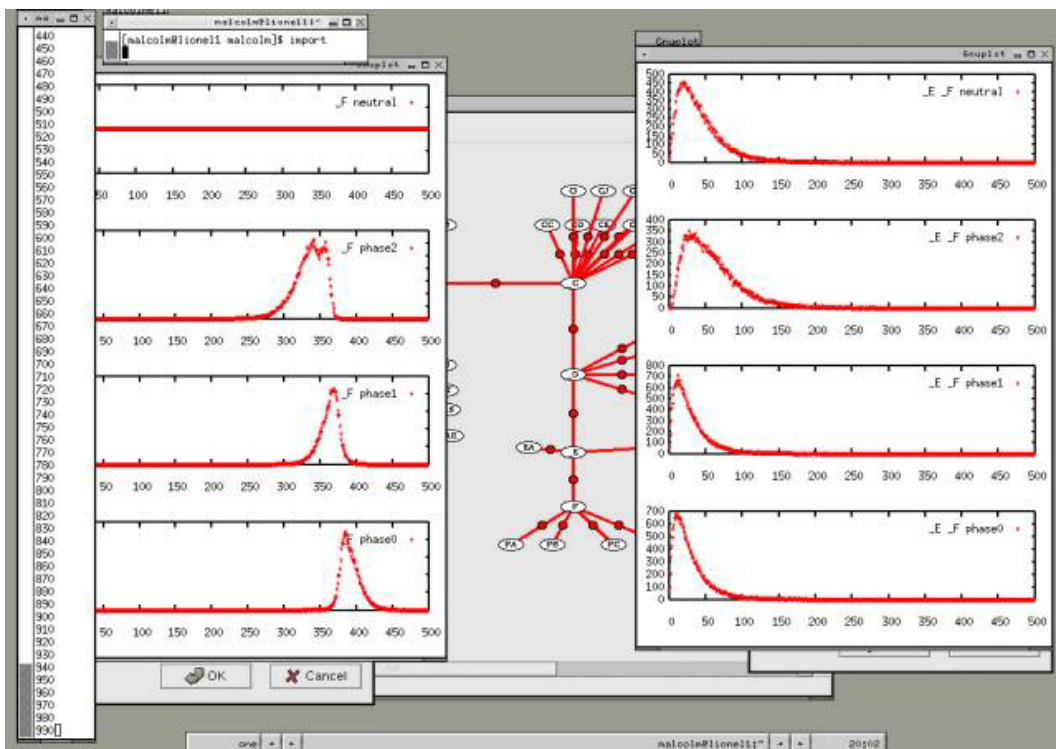


Figure 1: Screen shot from program analysing a network showing the voltage and current PDFs at points on the network. The results agree closely with monitoring measurements at these points.