Can you elaborate the use of OpenDSS for study of GPR (ground potential rise)?

OpenDSS has been used for this problem for both Transmission and Distribution Systems. You basically have to model all ground paths and OpenDSS is one of the few general-purpose distribution system analysis tools that can do this. You have to model the downleads on every pole and the grounding resistance of each ground rod.

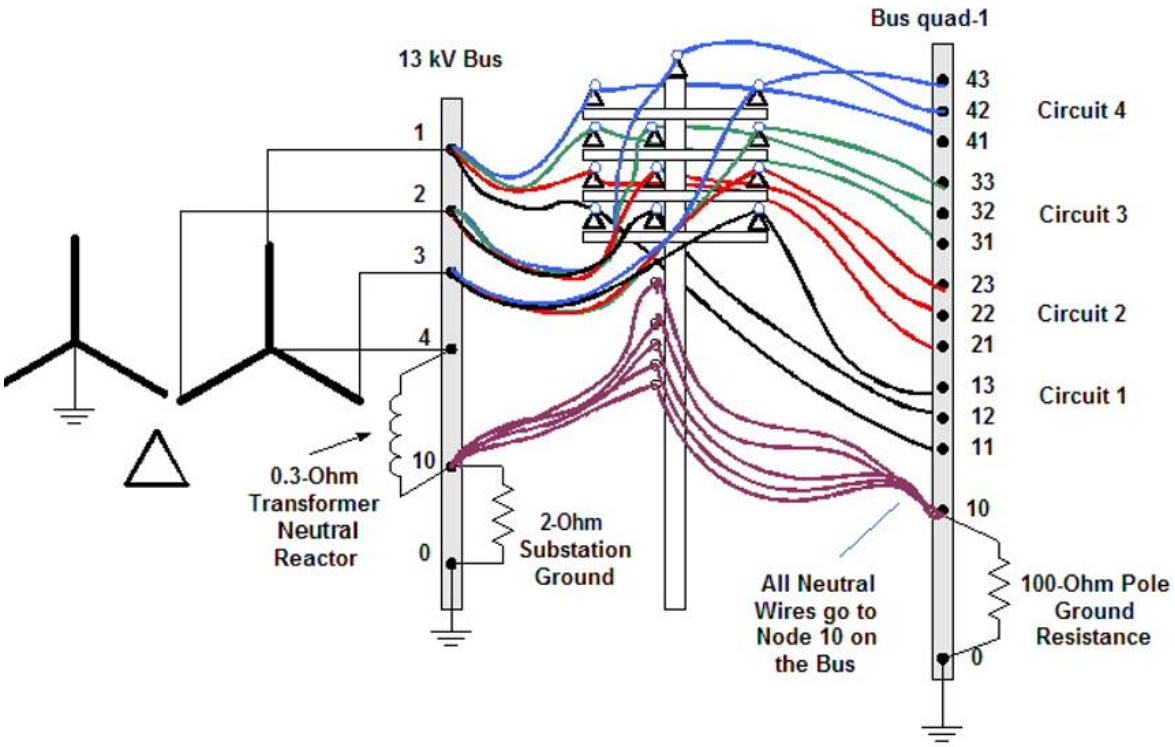
The solution is generally a simple constant admittance solution, so it is a linear problem although you could add a Load or other nonlinear element. You would build a model of all the line elements and connections to ground. Then you would add a FAULT object connected between the appropriate two nodes. These nodes are not necessarily ground (node 0 at a bus). If the fault is phase to neutral, you would connect the Fault between those two points that are usually at the pole top.

You would generally want to model the neutral wires explicitly and not utilize the Kron reduction. It would not meet the requirement that the neutral voltage be zero because you want it floating above ground.

See the figure below.

Pl explain how to find GPR is there any example available?

The best public example we have is the IEEE NEVTestcase that is installed with the program . Here is detail of the first power outside the substation to give you an idea of the model required for this problem.



Is ground modeled as a single universal node, or is each ground point a different node? Are earth-current effects neglected?

> You have a choice of modeling it either way. For most power flow problems ground is a single node that is the reference for the Y matrix. If you model it as different points like in the IEEE NEVTestcase, you have to model all conductors between the points. Overhead line models generally include the Carson model of earth.

Hi, what is the advantage of using ODSS over Ephasorsim for dynamic simulation of a distribution grid with a large number of DERs?

> Ephasorsim is a powerful application that seems to be very good. OpenDSS does not have as many mature dynamics models. I can not speculate on advantages. Possibly the only advantage is that it is free and you have access to the code so you could develop your own model if you were so inclined.

Is it only for small signal stability or it can have transient stability?

We need more clarification to answer that. Would you please use the forum to explain that better?

Forum link: https://sourceforge.net/p/electricdss/discussion/

How can one obtain sinusoidal view of voltages and currents for a dynamic mode simulation

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Forum link: https://sourceforge.net/p/electricdss/discussion/