TechNote Z1 Z2 Z0 Properties

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Entering Z1 Z2 Z0 Properties VSOURCE and REACTOR

As of the 7.6.3.3 version OpenDSS has some new ways to define the symmetrical component impedances of VSOURCE and REACTOR objects.

You can enter the impedance as a two-element array represent the real and imaginary components. For example:

```
Z1=[1 2]
```

-or-

```
Z1 = "1 2"
```

This represents $Z1 = 1 + j2$.

You can also enter a $Z2$ value that is *different* than $Z1$, which allows you to make equivalents representing rotating machines. The first time you set $Z1$, the values for $Z2$ and $Z0$ are defaulted to the value entered for $Z1$. Then you can subsequently change $Z0$ and $Z2$.

For VSOURCE devices, you can also specify the sequence impedances in per unit, which is another common way to receive equivalent source data for transmission systems. The property names are: **puZ1**, **puZ0**, and **puZ2**. These must be converted to *ohms* to be of use to OpenDSS, so the **baseMVA** property for the VSOURCE object has been added. It defaults to 100 MVA, which is very common for transmission system analysis. So you might not have to set this property often if you are copying values from transmission power flow programs. Note that some distribution program use a 10 MVA base.

```
The base ohms is computed from the basekV and the baseMVA properties.
```

As of this writing, the latest build is posted on the Code site under the Distrib folder. You can download the appropriate version from the X86 or X64 folders. See links on:

EPRI Link Page (http://smartgrid.epri.com/SimulationTool.aspx)

--Rdugan 19:37, 1 April 2013 (UTC)

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