

vco1.gce

Attributes

```
mainvars: vin vout
outvar: w=var_of_w
rparms: vmin=1 vmax=4 fmin=1e6 fmax=2e6
```

Description

vco1.gce is an ideal “voltage-controlled oscillator.” It employs the following equations to relate the general variables **vin** and **vout**:

$$\begin{aligned}k &= 2\pi \frac{f_{\max} - f_{\min}}{v_{\max} - v_{\min}}, \\ \omega &= 2\pi f_{\max} && \text{if } v_{\text{in}} > v_{\max} , \\ \omega &= 2\pi f_{\min} && \text{if } v_{\text{in}} < v_{\min} , \\ \omega &= k(v - v_{\min}) + 2\pi f_{\min} && \text{otherwise ,} \\ \theta &= \int \omega dt , \\ v_{\text{out}} &= \sin \theta .\end{aligned}$$

AC behaviour is not implemented.