

filter_hp2.gce

Attributes

```
mainvars: x y
stparams: y_sv=0 y1_sv=0
iparms: flag_asympt=0
rparams:
+   fc=1
+   k=1
+   xi=0.1
```

Description

`filter_hp2.gce` is a second-order high-pass filter with the transfer function given by

$$y(s) = k \frac{s^2}{s^2 + 2\xi\omega_c s + \omega_c^2} x(s), \quad (1)$$

where $\omega_c = 2\pi f_c$.

In AC analysis, the above equation holds with the substitution $s = j\omega$. The integer parameter `flag_asympt` is useful for plotting the Bode approximations (magnitude and phase) of a transfer function involving `filter_hp2.gce`. When this flag is set to 1, the Bode approximation of Eq. 1 is used; if it is 0, normal (i.e., exact) computation of $y(s)$ is carried out.