# Symbolic perturbation calculus example

For FDCFOA many authors propose connecting resistor between nodes . It yields:



Differential voltage.

Common voltage.

There is no negative resistance in PDD with HOSC. However, can be modeled as a transimpedance. A few different components with the same literal can be treated as one subcircuit only if each component is the same type. Thus, should be modeled as the transimpedance, as well.



Results from simulations are:

Developed values are:

Voltages after simplifications:

To have small influence of asymmetry of current for the voltage drop , we should have rather large (and it really is). However, large can be a reason of large , even for small asymmetry between currents. It can easily exceed some power supply voltage and latch the circuit.