Simulating _single_component_and_exporting_s_pars

September 20, 2023

[1]:
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# This notebook uses scikit-rf, an open-source Python package for RF and␣
 ↪Microwave applications.
# Home Page https://scikit-rf.org
# The following is a Jupyter notebook highlighting the use of scikit-rf to␣
 ↪simulate and export s-parameters of
# an inductor
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[2]:
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import skrf as rf
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[3]:
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freq = rf.Frequency(start=0.1, stop=10, unit='GHz', npoints=1001) # the␣
 ↪necessary Frequency description
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[4]:
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# Circuit 1 : Inductor with 50 ohm terminations on both ports.

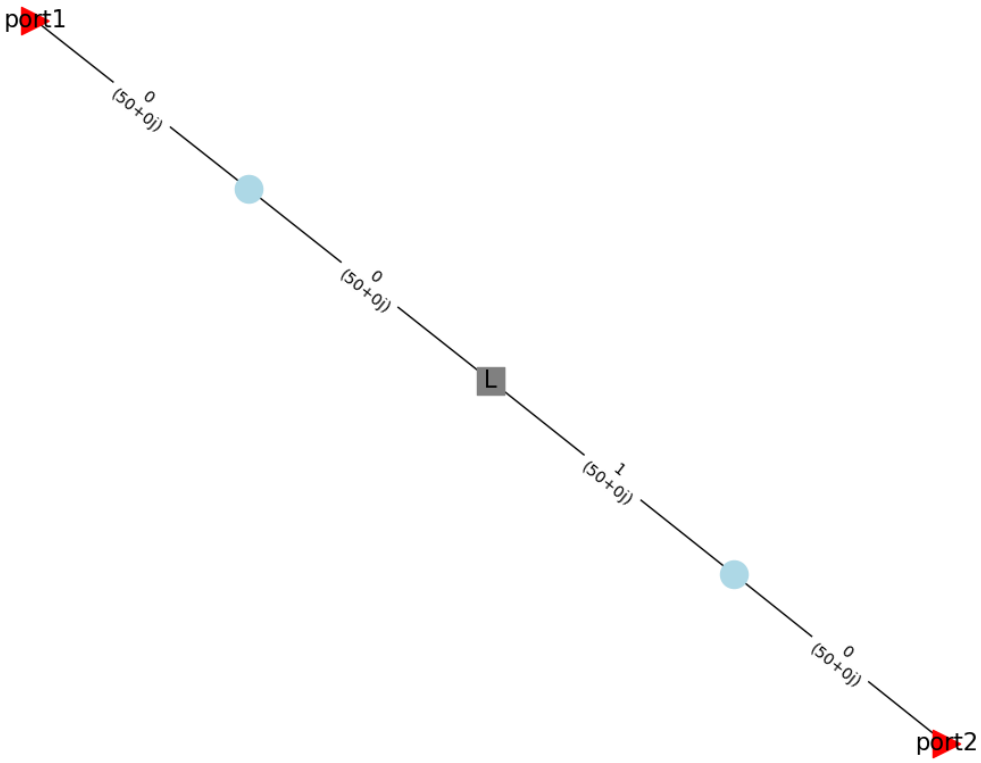
tl_media = rf.DefinedGammaZ0(freq, z0=50) # Transmission Line Properties
gnd = rf.Circuit.Ground(freq, name='gnd')
port1 = rf.Circuit.Port(freq, name='port1', z0=50)
port2 = rf.Circuit.Port(freq, name='port2', z0=50)
L = tl_media.inductor(2.5e-9, name='L')

# Connection List

cnx = [
    [(port1, 0), (L, 0)],
    [(L, 1), (port2, 0)],
      ]

cir = rf.Circuit(cnx) # Build the circuit
ntw = cir.network     # getting the resulting Network from the 'network'␣
 ↪parameter:

# Check if netlist is correct
cir.plot_graph(network_labels=True, network_fontsize=15,
               port_labels=True, port_fontsize=15,
              edge_labels=True, edge_fontsize=10)
```



[5]:
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# Circuit 1 Plot S11

ntw.plot_s_smith(m=0,n=0,draw_labels=True) # Plot S11 on Smith Chart
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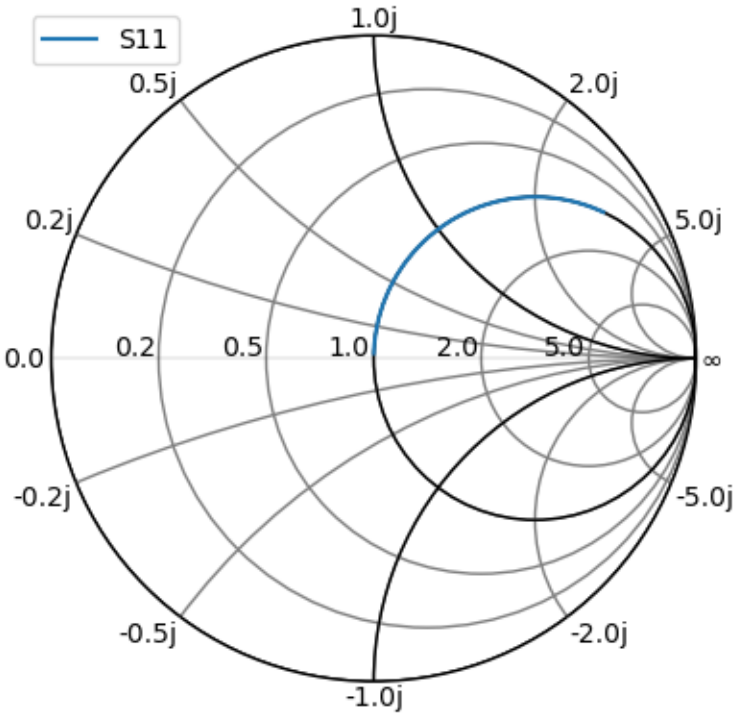

[6]:
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# Circuit 1 Export s2p file

ntw.write_touchstone('inductor.s2p')
```