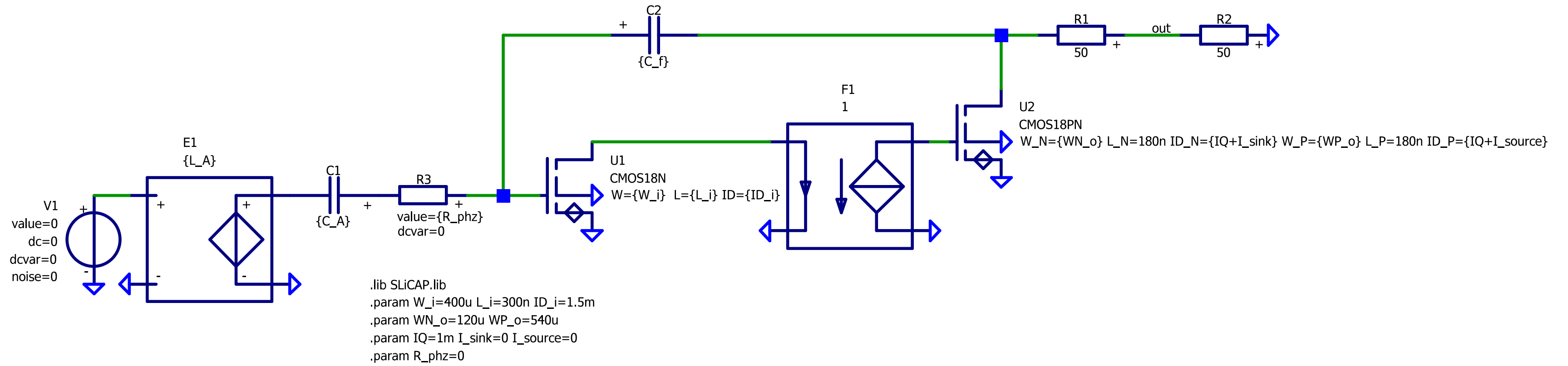# Structured Electronic Design

EE4109
Active antenna:
Bandwidth limitation
with phantom zeros

Anton J.M. Montagne

Dual stage with phantom-zero bandwidth limitation

V1
value=0
dc=0
dcvar=0
noise=0

E1
{L_A}

C1
{C_A}

R3
value={R_phz}
dcvar=0

U1
CMOS18N
W={W_i} L={L_i} ID={ID_i}

C2
{C_f}

F1
1

U2
CMOS18PN
W_N={WN_o} L_N=180n ID_N={IQ+I_sink} W_P={WP_o} L_P=180n ID_P={IQ+I_source}

R1
50

out

R2
50

.lib SLiCAP.lib
.param W_i=400u L_i=300n ID_i=1.5m
.param WN_o=120u WP_o=540u
.param IQ=1m I_sink=0 I_source=0
.param R_phz=0

dualStageBWlimit.py