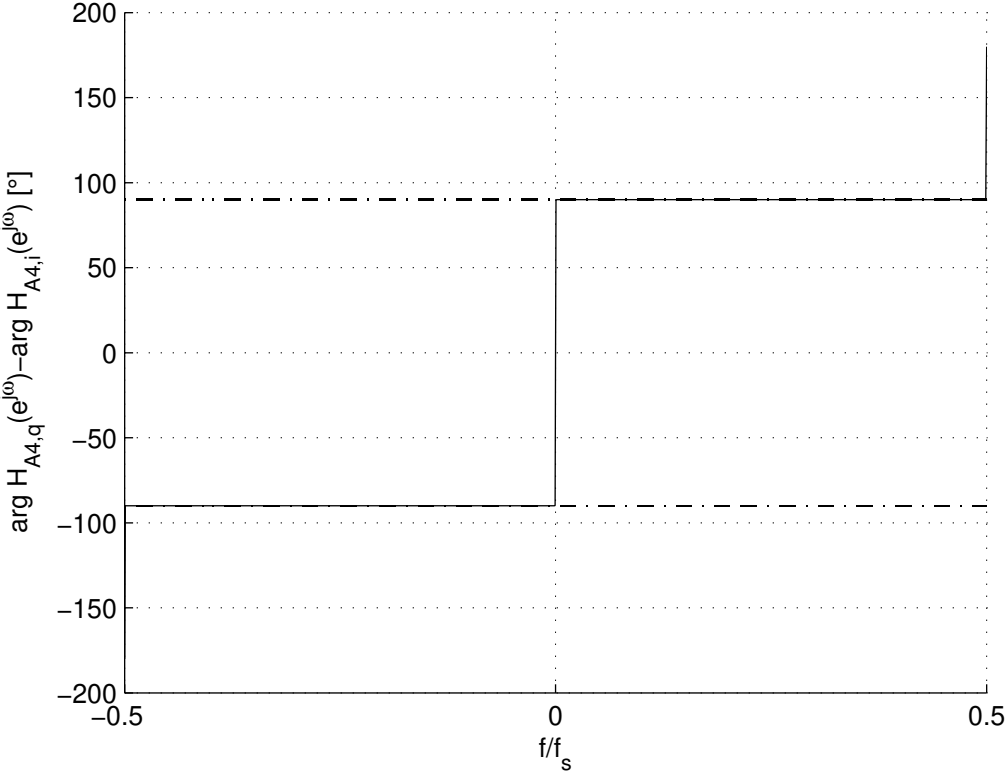
200
150
100
50
0
−50
−100
−150
−200
−0.5
0
0.5
f/f_s
arg H_A4,q(e^jω)−arg H_A4,i(e^jω) [°]