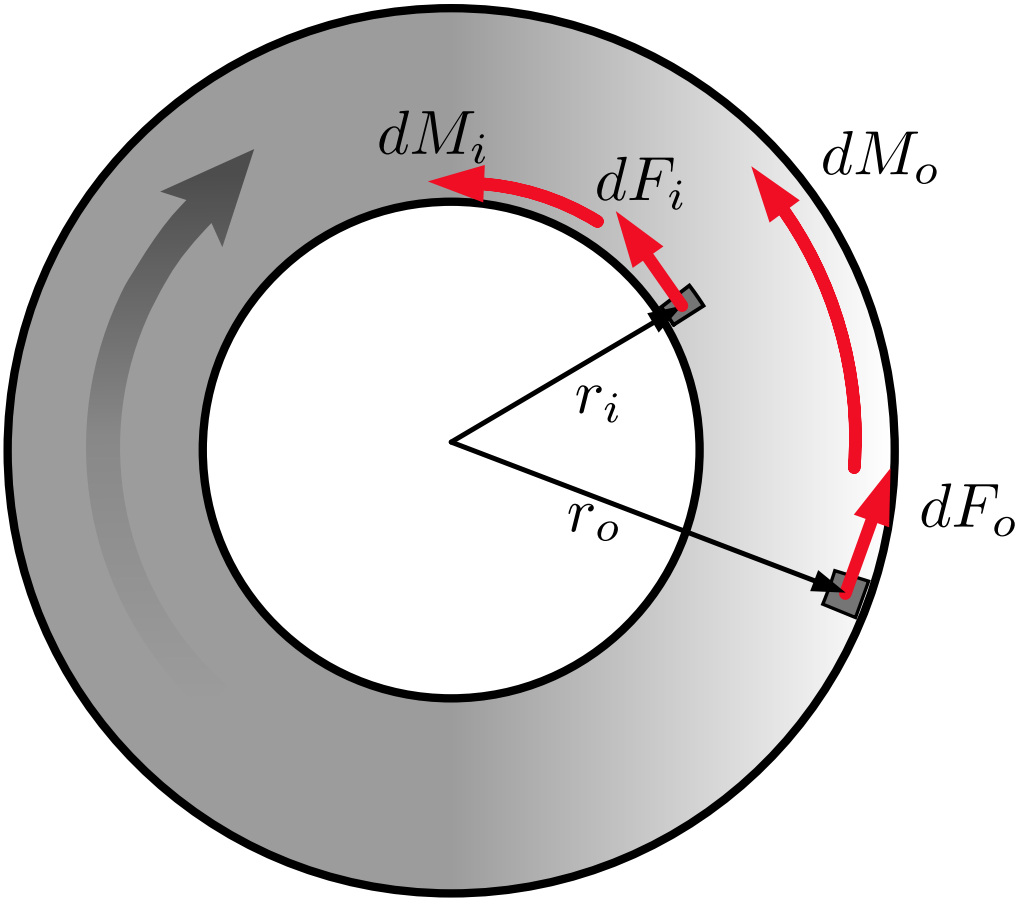
dM_i
dF_i
dM_o
r_i
r_o
dF_o