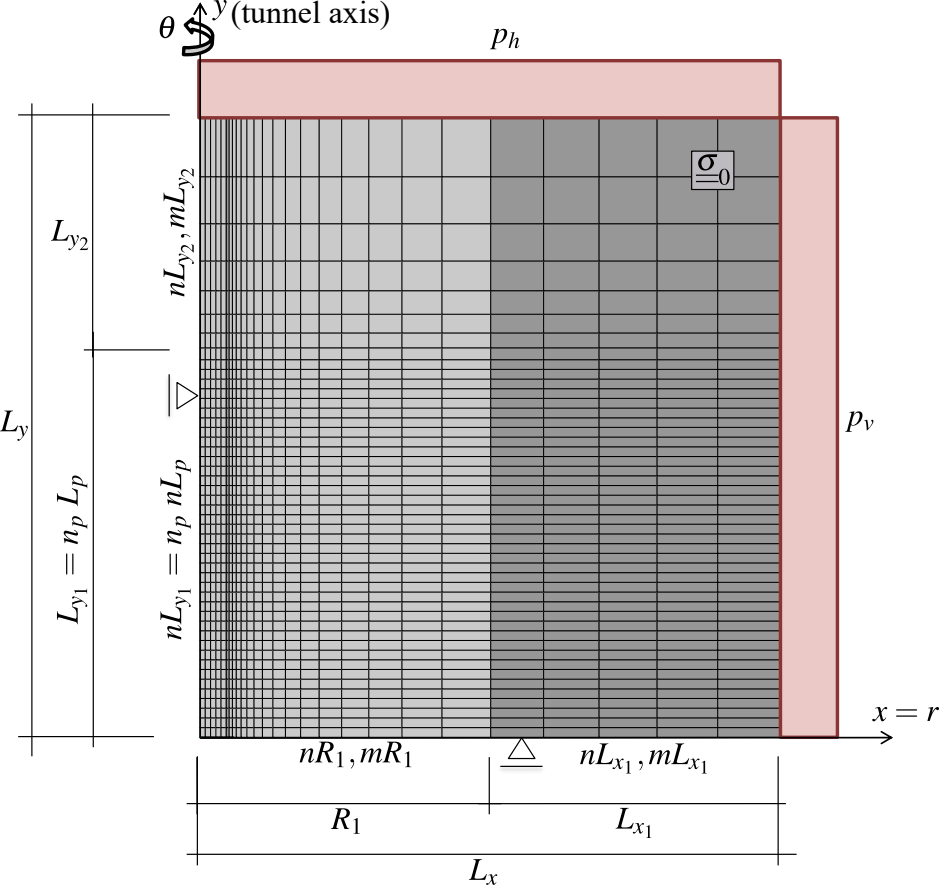
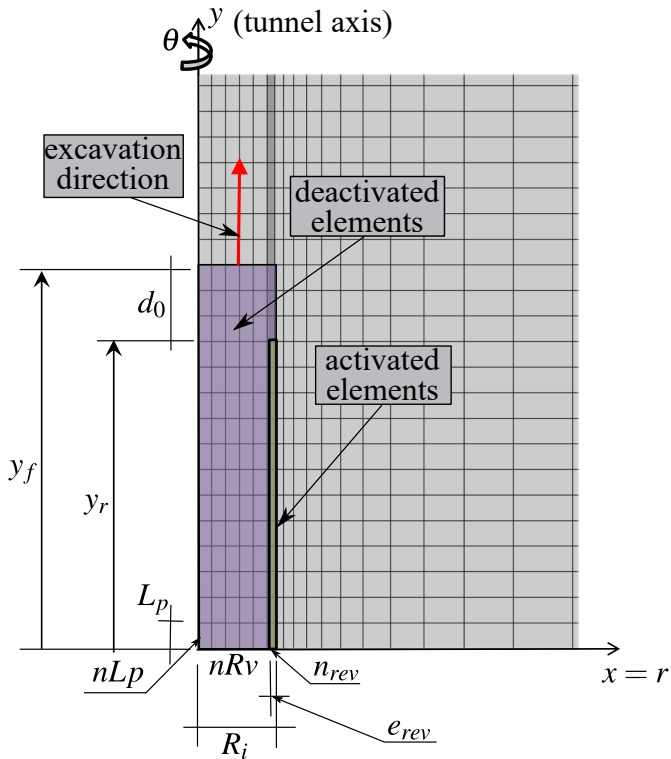

θ
y (tunnel axis)
p_h
$\underline{\underline{\sigma}}_0$
L_{y_2}
nL_{y_2}, mL_{y_2}
L_y
$L_{y_1} = n_p\, L_p$
$nL_{y_1} = n_p\, nL_p$
p_v
$x = r$
nR_1, mR_1
nL_{x_1}, mL_{x_1}
R_1
L_{x_1}
L_x


θ
y (tunnel axis)
excavation direction
deactivated elements
activated elements
d_0
y_f
y_r
L_p
nLp
nRv
n_{rev}
e_{rev}
R_i
$x = r$