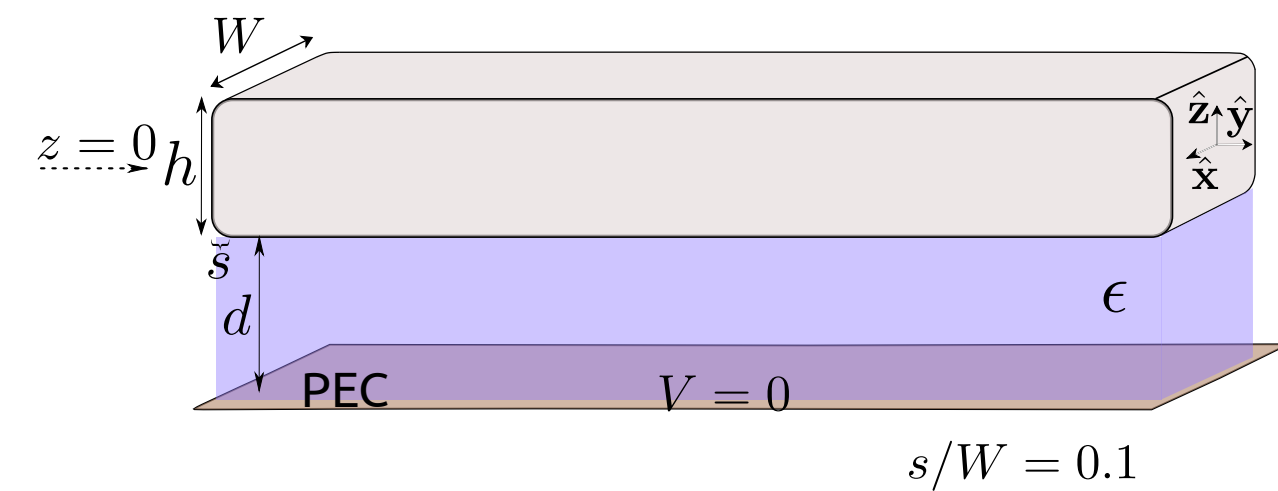
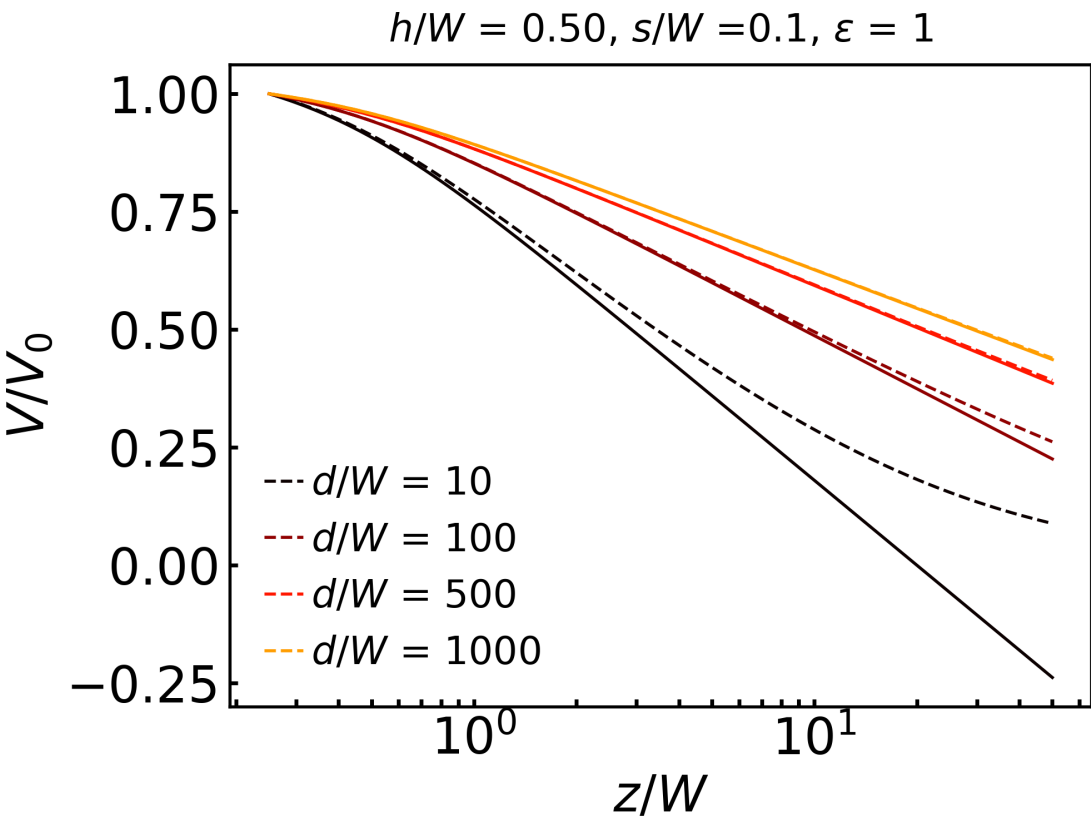


Electron-coupling-to-WG: Potential near rectangular nanowire adding a substrate

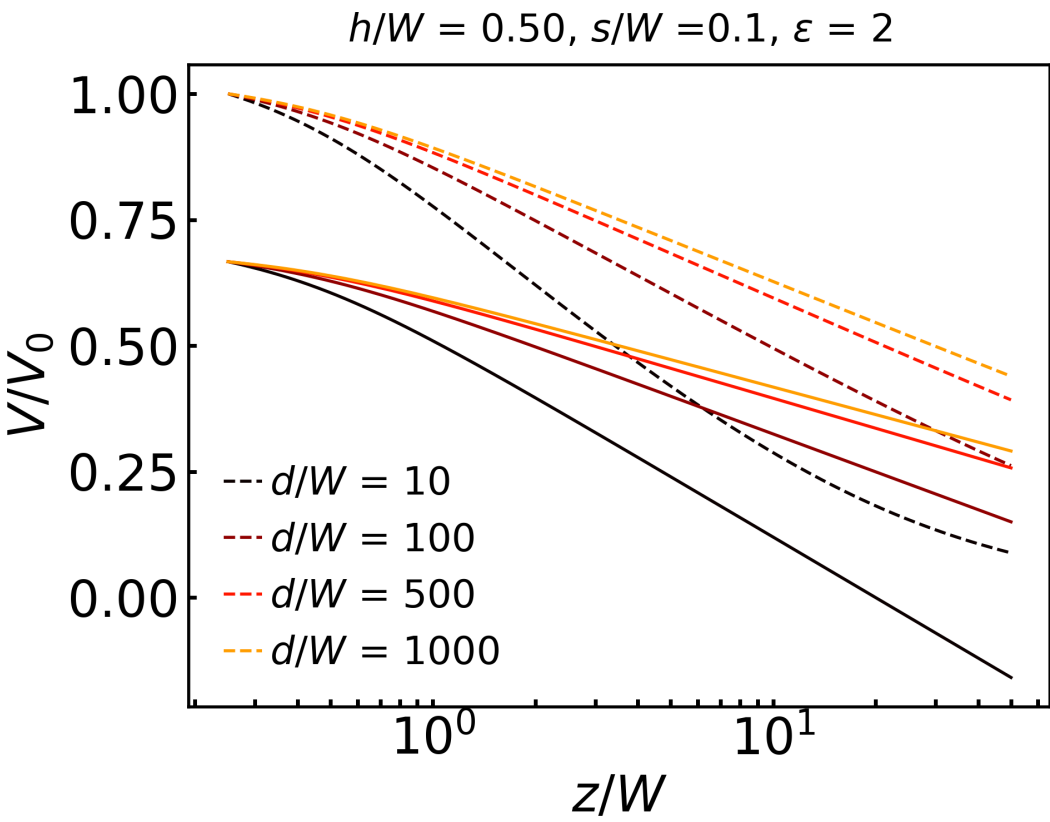


Comparing potential with and without substrate (dashed)

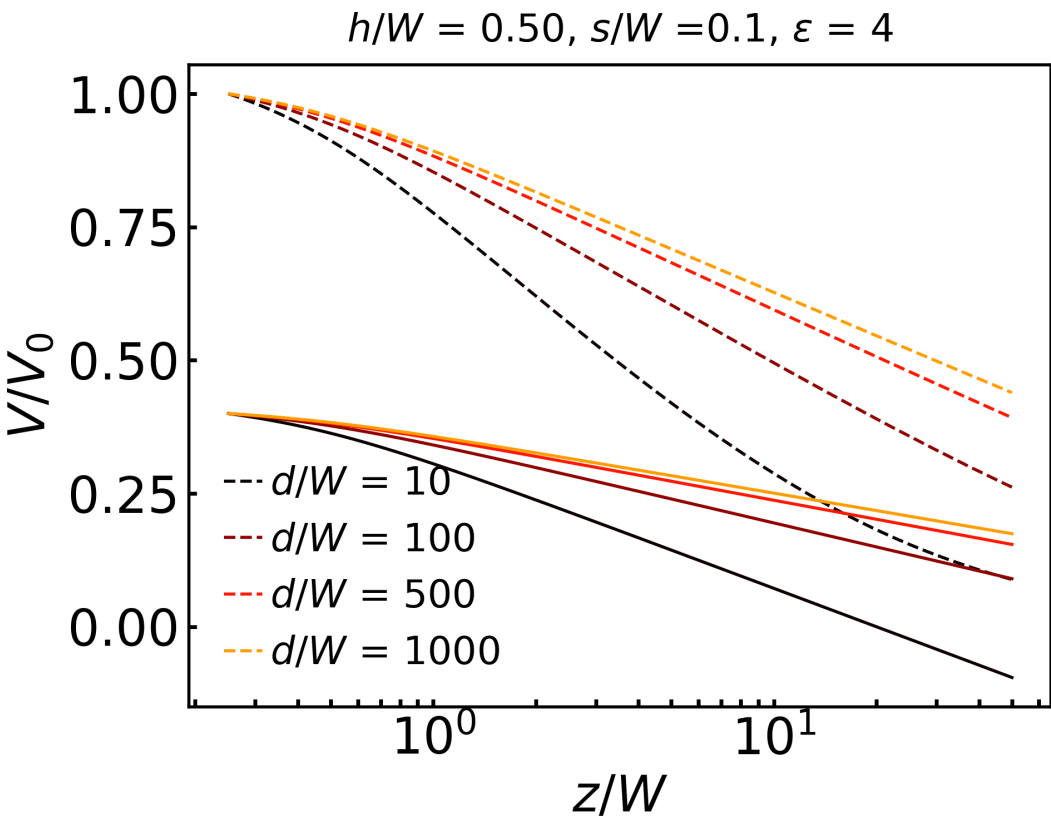
$\epsilon = 1$



$\epsilon = 2$



$\epsilon = 4$



Solution with substrate is valid when $d \gg 1$

$z > h/2$
Above the waveguide