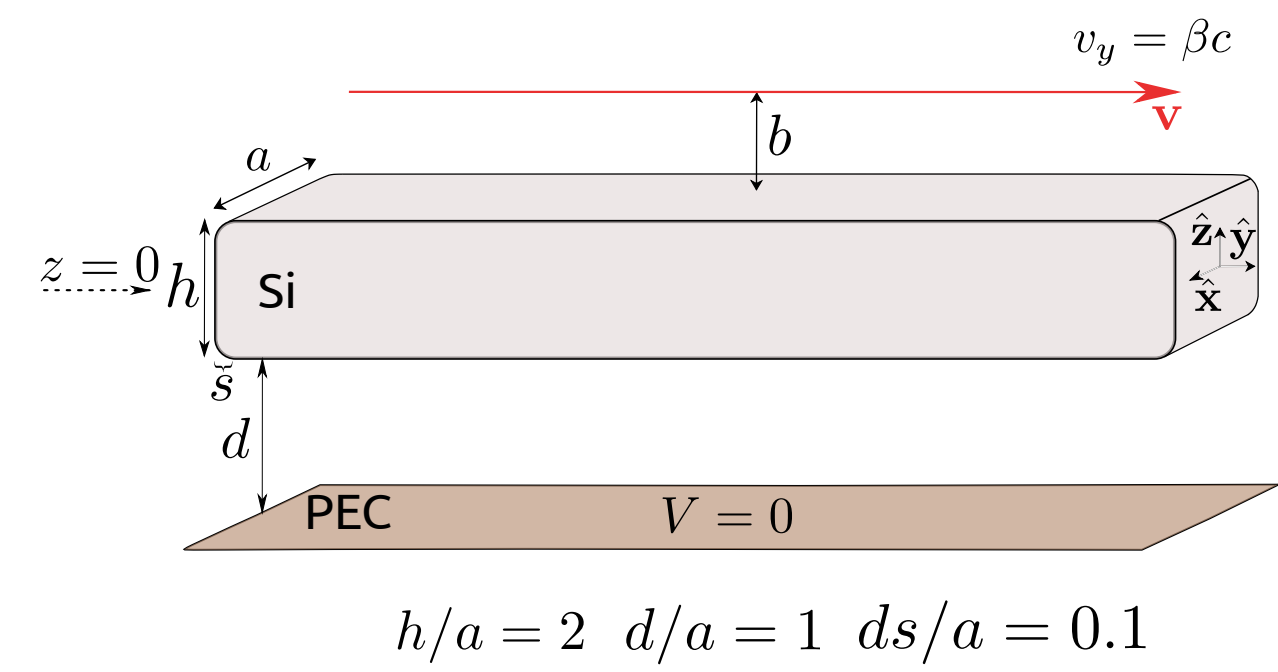
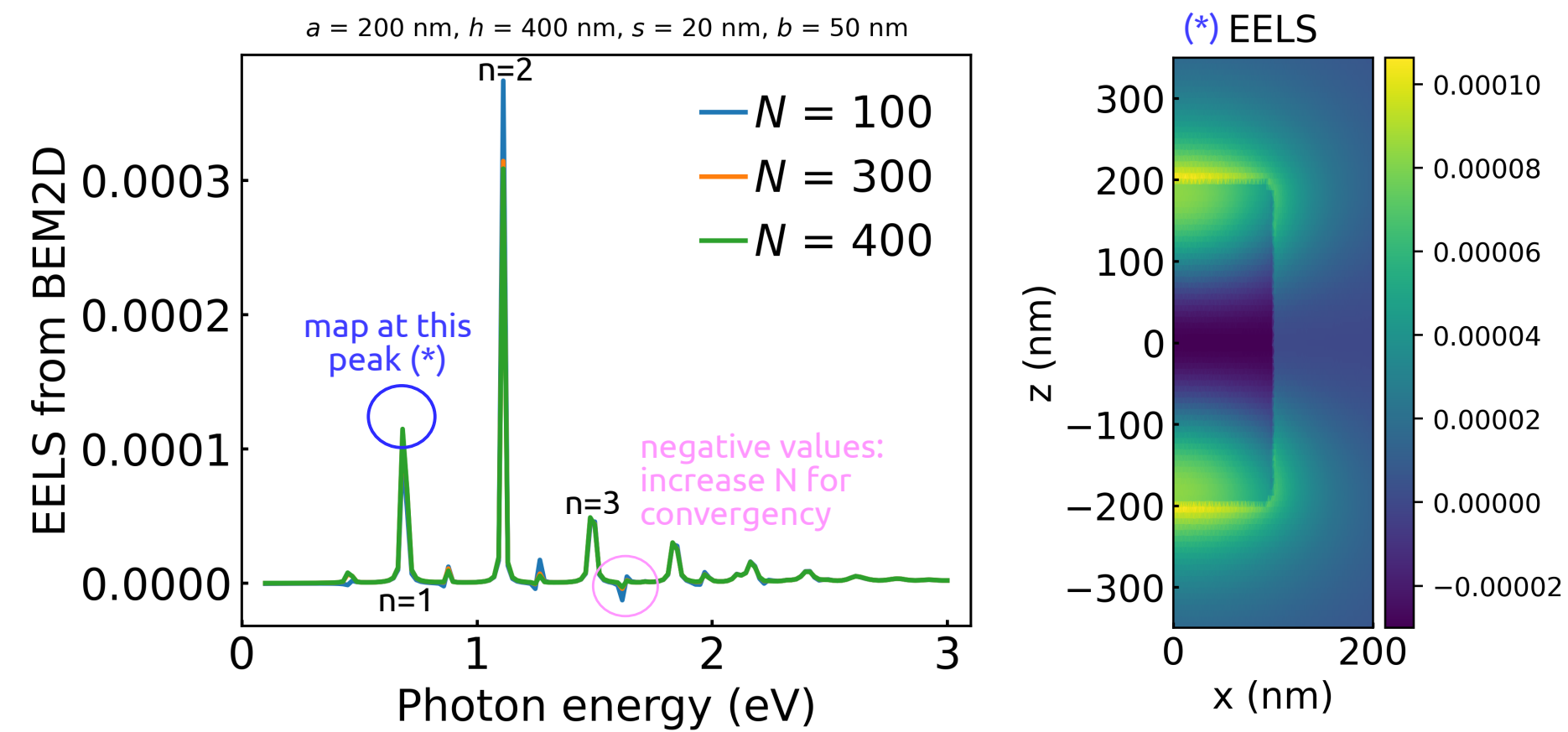
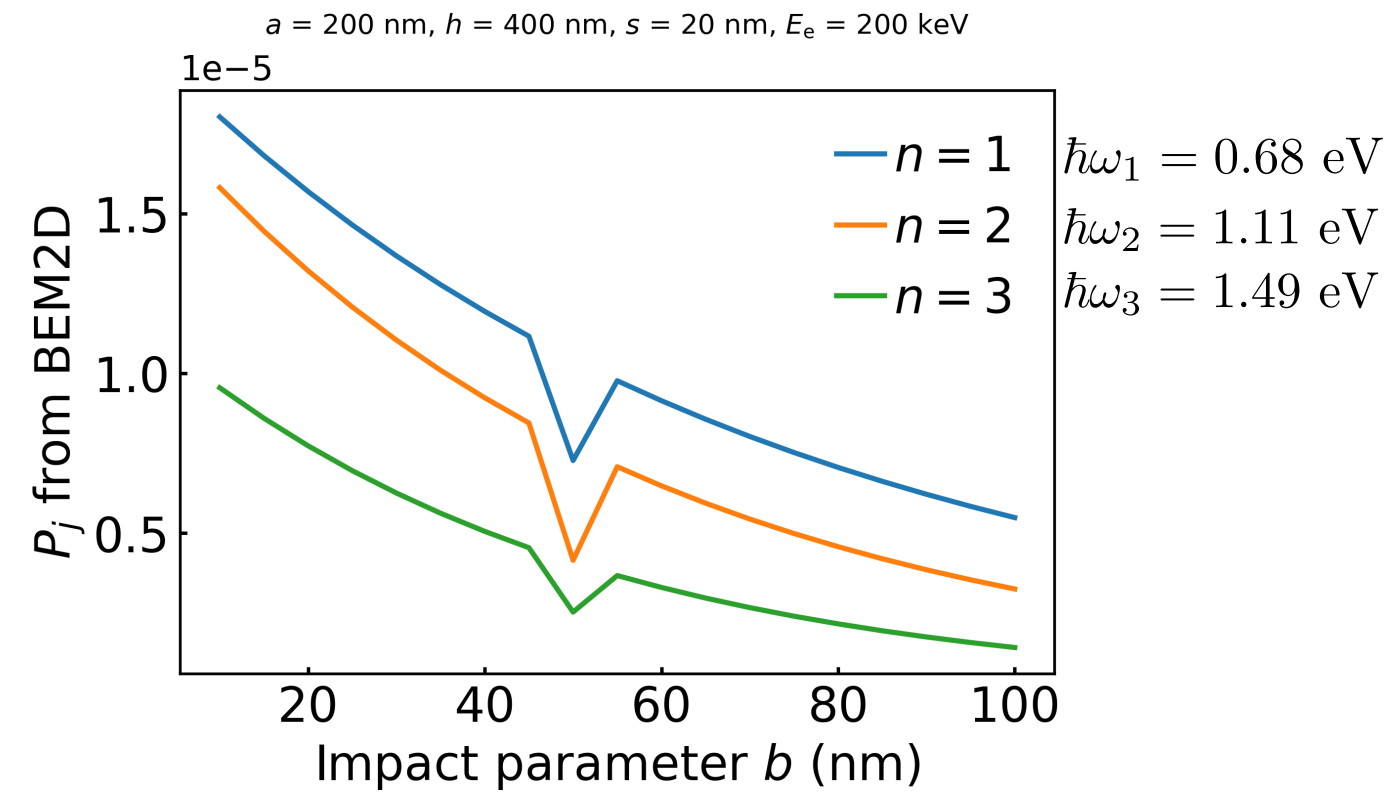


BEM 2D: EELS of rectangular waveguide for a parallel trajectory



Integration over the peaks:
from bem2D

$$P_j(b) = \int_{\Delta\omega_j} d\omega \frac{d\Gamma_{\text{EELS}}(z_e, \omega)}{dy}$$



Next step: correction of the trajectory and increase N

EELS from BEM2D

$x=0$

$z \text{ coordinate (nm)}$

$\hbar\omega = 0.68 \text{ eV}$
 $\hbar\omega = 1.11 \text{ eV}$
 $\hbar\omega = 1.49 \text{ eV}$

$a = 200 \text{ nm}, h = 400 \text{ nm}, s = 20 \text{ nm}, N = 300, E_e = 200 \text{ keV}$

$$P(\omega) = 2 \int_{z_{\min}}^{\infty} \frac{\beta dz}{\sqrt{\beta^2 \sin^2 \theta + \frac{2eV(z)}{m_e c^2 \gamma_e}}} \frac{d\Gamma_{\text{EELS}}(z, \omega)}{dy}$$

from bem2D