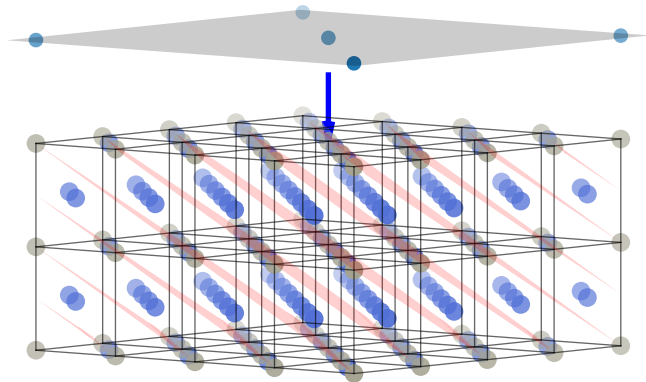Scattering on a cubic lattice. $k_{in} = (2\pi/a) \cdot [\ 0.\quad 0.\quad -1.5]$

Detection screen.
Scattering lengths: [1. 0.5 0.5 0.5]

[-1 1 2]   [1 1 2]

[0 0 3]

[-1 -1 2]   [1 -1 2]