

[mex246] Small-angle scattering from power-law potential

Consider small-angle scattering from a repulsive power-law potential $V(r) = \kappa/r^\alpha$ using the relations derived in [mln105].

- (a) Find the scattering cross section $\theta(s)$.
- (b) Find the scattering cross section $\sigma(\theta)$.
- (c) Show that the small-angle results of $\sigma(\theta)$ for $\alpha = 1$ and $\alpha = 2$ are consistent with the general results from [mex56] and [mex59], respectively.

Solution: