A survey of near threshold resonances for $1/R^n$ **long-range potentials**[1] DI SHU, IONEL SIMBOTIN, ROBIN CÔTÉ, University of Connecticut, Department of Physics — We present a systematic study of threshold behavior properties for scattering problems with attractive potentials with an asymptotic tail of the type $V(R) \approx -C_n/R^n$. We show detailed numerical results for partial waves $\ell = 0,\ 1,\ 2$, which we analyze in terms of the Jost function. Although the energy dependence of phaseshifts and cross sections is strongly affected by the presence of resonances, the Jost function has a rather smooth behavior. Thus, using very simple parametrizations for the Jost function, one can easily account for near threshold resonances, while also including fully the contribution of the long range tail of the potential.

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