Properties of the angular-momentum and site basis, with plane waves.









The wave function of the incident electron wave at the absorber is



Insert complete sets:



The operator t has the matrix elements , and so the sum over *L*” is removed.





if we choose the origin to be at the absorber position **R***a*, then *L* = 0 and





where , the scattering t-matrix for the atom located at **R***i*. All that remains is to calculate *G*, for which we use the separable expansion of Rehr and Albers:



Examining just the single-scattering term,



which, when compared to the plane-wave single scattering scattering formula:



yields an expression for the effective scattering amplitude *f*eff



APPENDIX A: Calculation of 

First, insert a complete set of states:





Change variables: **p** = (**r** - **R)**, **r** = **p** + **R**, d**r** = d**p**



Expand the exponential under the integral in spherical harmonics:







and we have the result that



We can check this result by applying a complete set of states to :





