Software Spec – RadialWaveFunction Class

Class RadialWaveFunction

Encapsulates a (normalized) radial wave function.

Sub New(E as double, n as integer, l as integer, Pnl() as Double(), mesh as IRadialMesh)

Function Pnl(index as Integer) as Double

Function Rnl(index as Integer) as Double

Function R(index as Integer) as Double

* Pass through to Mesh.X(index)

Readonly Property N as integer

* Returns the primary quantum number n. Must be greater than or equal to zero.

Readonly Property L as integer

* Returns the angular momentum quantum number l. Must be greater than or equal to zero.

Readonly Property E as Double

* Returns the energy eigenvalue of the state. Is less than zero for bound states.

Function Sigma(index as Integer) as Double

* Returns the spherically-averaged radial charge density.

Function Rho(index as Integer) as Double

* Returns the radial charge density.