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Calculating Particle-Mass Hierarchy TERRENCE MCGRATH, Elemetric LLC — We describe a new approach to our fundamental understanding of particle mass. Starting with a spherical potential well (Bohm) as the description for a nucleus we show that six independent sets of electromagnetic waves interacting with the field generate fundamental symmetries that can be related to the organization of mass structure. Resonances between the nucleus and whole integer four-wave node intersections within the field surrounding the well generates closed paths of energy transfer whose scale can be defined using high-density lattice circle solutions using recursive geometric techniques. These energy loops are shown to provide real world solutions for calculating the relative masses of electrons, protons, neutrons and quarks, each to five places accuracy. The proposed loop structure and mechanics of energy transfer also provide a conceptual foundation for the particle mechanics for charge, the electric and magnetic fields, and quark confinement. Interestingly these quantum loops also provide the missing confinement component of Wilson Loops introduced in 1974.

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