

The (Z,A) Dependence of Muon-to-Electron Conversion

If muon-to-electron conversion in the field of a nucleus is found in the current generation of experiments (i.e. Mu2e or COMET), the measurement of the atomic number dependence of the process will become an important experimental goal. We present a new treatment of the (Z,A) dependence of muon to-electron conversion. Our approach differs from earlier work in that it combines nuclear charge distribution determinations from both electron scattering and muonic atoms, takes into account the effect of permanent quadrupole deformations, and employs a Hartree-Bogoliubov model for the neutron distributions. The results are compared with earlier calculations.

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