Muonic atom

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. Browne	NDS 107, 2579 (2006)	1-Nov-2004

Muonic-atom $T_{1/2}$=55.5 ns *4*; neutrons followed (1978Wi07).

Muonic x rays studied, charge distribution in g.s. deduced; B2=0.252 *2*, B4=0.001 *12*, Q=9.61 *7* (1978Cl03). Earlier analysis of 1974Da03 indicating non-zero B4 and B6 is not supported by more complete analysis of 1978Cl03; however, 1986Zu01 deduce B2=0.2331 *25* and B4=0.095 *9* (the analysis is model dependent and the uncertainties quoted are statistical only). See 1986Zu01 for parameters of the assumed deformed Fermi charge distribution and for the deduced intrinsic quadrupole and hexadecapole moments.

Deduced mean square charge radii of U and Pu isotopes from muonic x-rays relative to ^{232}Th (1990Na22).

Muonic-atom $T_{1/2}$=55.7 ns *14*; decay electrons followed (1976Ha20).

Muon capture and muon-induced fission compiled and analyzed (1980Wi06). Muon capture in ^{232}Th measured, $T_{1/2}$=54.9 ns *14* muon decay-electrons followed (1977Jo09); according to 1980Wi06 this $T_{1/2}$ may be too long because of contribution of muon capture in fission fragments following radiationless (prompt) fission. $T_{1/2}$=53.6 ns *2* fission following μ capture (1978Ga14,1980Ga23). Prompt and delayed neutron spectra studied (1978Zg01).