

# SPHERICAL PROTON EMITTERS<sup>1</sup>

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Various theoretical approaches to proton emission from spherical nuclei are investigated, and it is found that all the methods employed give very similar results. The calculated decay widths are found to be qualitatively insensitive to the parameters of the proton-nucleus potential, i.e., changing the potential parameters over a fairly large range typically changes the decay width by no more than a factor of  $\sim 3$ . Proton half-lives of observed heavy proton emitters are, in general, well reproduced by spherical calculations with the spectroscopic factors calculated in the independent quasiparticle approximation. The quantitative agreement with experimental data obtained in our study requires that the parameters of the proton-nucleus potential be chosen carefully. It also suggests that deformed proton emitters will provide invaluable spectroscopic information on the angular momentum decomposition of single-proton orbitals in deformed nuclei.

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