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Internal conversion coefficients from conversion electron sources

Internal Conversion (IC) is an important component of most nuclear decay schemes, in order to balance a decay scheme correctly, one need to know IC contribution to each transition [1]. The knowledge of the IC processes is of importance for the evaluation of absolute and relative radiation strengths. Furthermore the study of correlations involving IC offered the possibility to determine the parity change in a transition [2].
Over the last decade, tabulated internal conversion coefficients (ICC) values have differed significantly from one calculation to another by a few percent. Such differences cannot be tolerated in some applications. The best agreement data was achieved with a version of Dirac-Fock method calculation that ignored the atomic vacancy created by the conversion process [3]. The problem of whether or not to take into account the hole in the atomic shell after conversion has been considered in a number of papers both with respect to the validity of the ICC theory and to the quality of agreement between that theory and experimental data [4, 5].
In this work experimental ICC for nuclei across Z≈50 are determined in two different methods and compered to the two theoretical methods.

Apply to be
 considered for a student
   award (Yes / No)?

yes

Level for award
 (Hons, MSc,
   PhD, N/A)?

PHD

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