

**The Half Life of the  $^{193}\text{Os}$   $\beta$ -Decay**

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Nuclear applications often require a good degree of knowledge on several parameters of the nuclei involved, both regarding the safety of the experiment and the reliability of the results. For instance, in Nuclear Activation Analysis (NAA), many nuclear parameters, such as reaction cross section and decay half life, have to be well known order to compute the results, and the uncertainties in these parameters frequently undermine the results obtained in the analyses. Even when the Instrumental variation of NAA, which relies on the use of a well known comparator irradiated together with the samples in order to eliminate most of the nuclear parameters from the equations, the value of the decay half life is still an important parameter and, as it appears inside an exponential function, its uncertainty must be carefully assessed because, under some conditions, it may well undermine the results of the whole analysis.

In this work, the half life of the  $\beta$  decay of  $^{193}\text{Os}$  – the most frequently used osmium isotope for NAA determinations – was measured by following the activity of 25 5mg  $^{192}\text{Os}$ -enriched samples for 20- 60 h after they were irradiated in the IEA-R1 reactor of IPEN-CNEN/SP. The resulting value was compatible with the tabulated value, with an uncertainty of the same order of magnitude.