Towards a revision of 234U and 230Th decay constants

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The quality of uranium-series ages depends on the accuracy and precision at which the decay constants of 234U, 230Th and 238U are determined. Here, we present intermediate results for a revision of the decay constants of 234U and 230Th. Therefore, we examined a selection of different materials in secular equilibrium using isotope dilution multi-collector inductively coupled plasma mass spectrometry (MC-ICP-MS). New approaches of our study in particular concern the characterization of routines for measuring all isotopes on Faraday cups, i.e. low abundance isotopes on cups with 10\(^{13}\) Ohm amplifiers, and a different selection of materials in comparison to previous studies. \(\lambda_{234}\) could be determined so far at a precision of 24 \(\varepsilon\) and agrees with the latest literature value of Cheng et al. (2013) within its error margins.