

T2.2-P06. Dating a nuclear event based on isotopic ratios

Nuclear event zero time is one of the key topics when detecting radionuclides in a sample. One can calculate the time based on parent-daughter relation, such as La140/Ba140, Nb95/Zr95, Y92/Sr92 ratios. Alternative method comprise understanding the nuclear phenomena and by comparing independent (no parent-daughter relationship) isotopes to each other. Due to fractionation, it would be beneficial to compare independent isotopes that are of sample element. Result of the study would be comparison of dating accuracy by different data source and providing of standard nuclear data tables that would enable quick assessment of zero time for different kind of situations like nuclear test, nuclear reactor release or fissionable target irradiation release. The results could be used directly for example in CTBTO sample dating and sample source characterization.

Primary author: YAMBA, Kassoum (Centre National de la Recherche Scientifique et Technologique (CNRST))

Presenter: YAMBA, Kassoum (Centre National de la Recherche Scientifique et Technologique (CNRST))

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