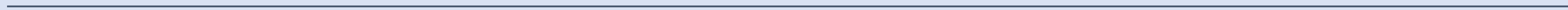




UTM Publication Plan



Offline Data for ^{136}Ba

Current analysis using PSI 2021 data is not analyze using our previous method (RCNP/JPARC).
-> We plan to develop new way to extract the Branching ratio $\text{Br}(X')$ with irradiation information.

Isotope X'	Half-life	$\text{Br}(X') \pm \text{stat. err.}$ (method 1) (%)
^{136}Cs	13.01 d	5.0 ± 0.7
^{134}Cs	2.0652 y	≈ 10.7
^{132}Cs	6.48 d	1.9 ± 0.1
^{129}Cs	32.06 h	0.088 ± 0.007
^{135}Xe	9.14 h	0.05 ± 0.01
^{133}Xe	5.2475 d	0.035 ± 0.004 *
$^{133\text{m}}\text{Xe}$	2.198 d	0.068 ± 0.007
^{131}I	8.0252 d	0.014 ± 0.004

Offline Data for ⁷⁶Se

RI origin	Br(X') old method	Br(X') new	Daniya PRC2019
		Enrichment 99.9%	92.74%
⁷⁶ As	14.1 ± 3.2%	26.2 h 27 ± 2.1%	13.65 %
⁷⁵ As	stable		6.5 %
⁷⁴ As	20.3 ± 1.9%	427.2 h 49 ± 5.7%	17.5 %
⁷³ As	stable		
⁷² As	1 ± 0.10%	26 h 5 ± 0.2%	2.4 %
⁷¹ As	1 ± 0.5%	65.3 h 1 ± 0.1%	0.96 %

Current status

- Based on
 - ^{136}Ba is much smaller than result from ^{127}I
 - ^{76}Se data, the $\text{Br}(X')$ is greater by 2x compare to Daniya PRC2019.
- If we used previous method relative $\text{Br}(X')$ using PNEM
 - the limitation is that we cannot explain the alpha emission in ^{136}Ba isotope production.
- ^{76}Se paper have not been draft!
 - Dec 2022 is a little tight for schedule.

Publication Plan 2022-2023 (Offline Measurement)

2022 (Physics Paper)

Muon Capture Strength of ^{136}Ba by PNEM for Neutrino Nuclear Responses
Muon Capture Strength of ^{76}Se by PNEM for Neutrino Nuclear Responses (Jan 2023)

Additional Suggestion (Theory paper)

PNEM vs pn-QRPA for ^{136}Ba and etc (J.Suhonen)

2023 (Technical Paper)

Sensitivity of Muon Capture Isotope Production on ^{136}Ba and $^{\text{Nat}}\text{Ba}$. (NIMA)

PROPOSED JOURNAL:
NPA/JPhysG/PRC/PLB