



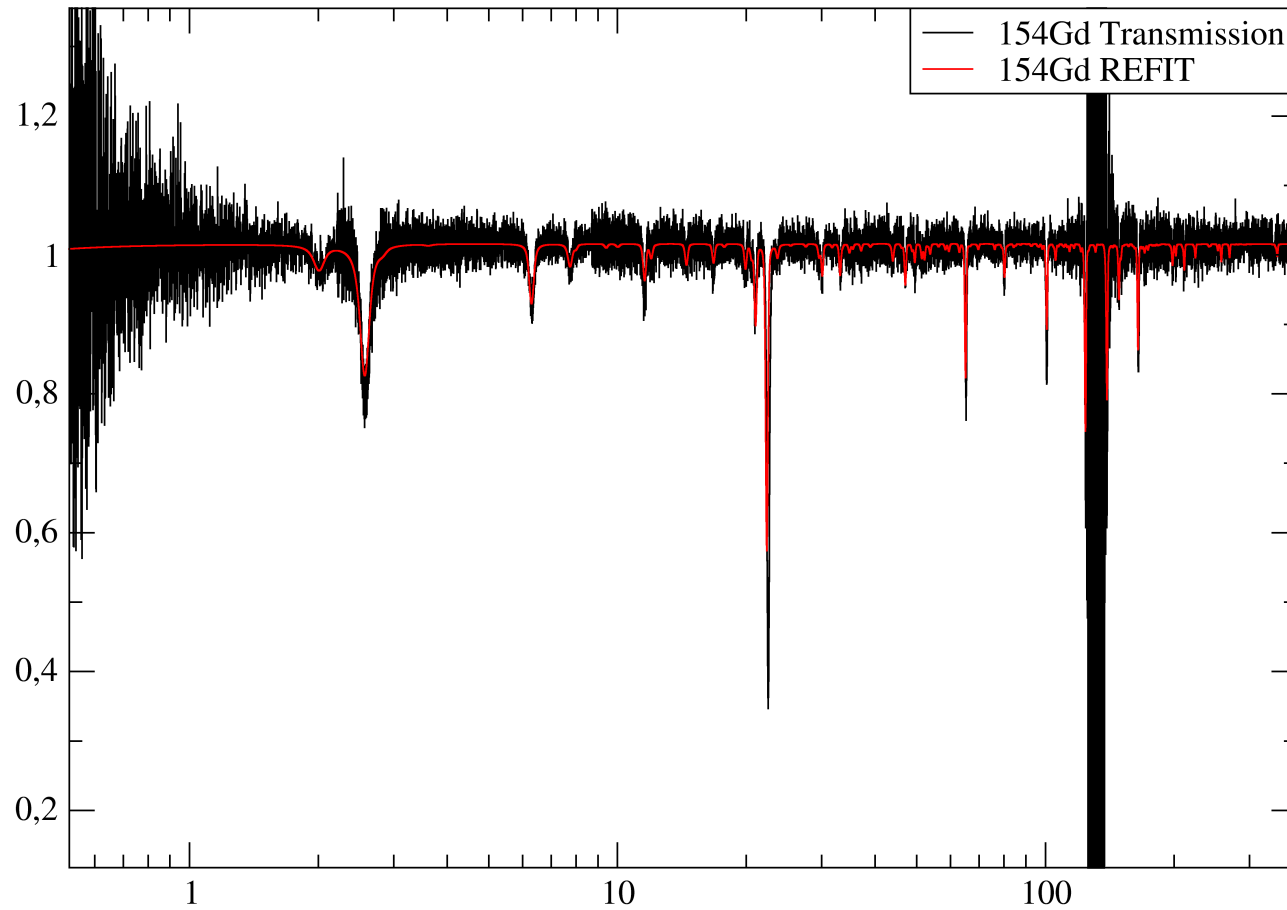
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154,155,157 Gd trasmissione e altro

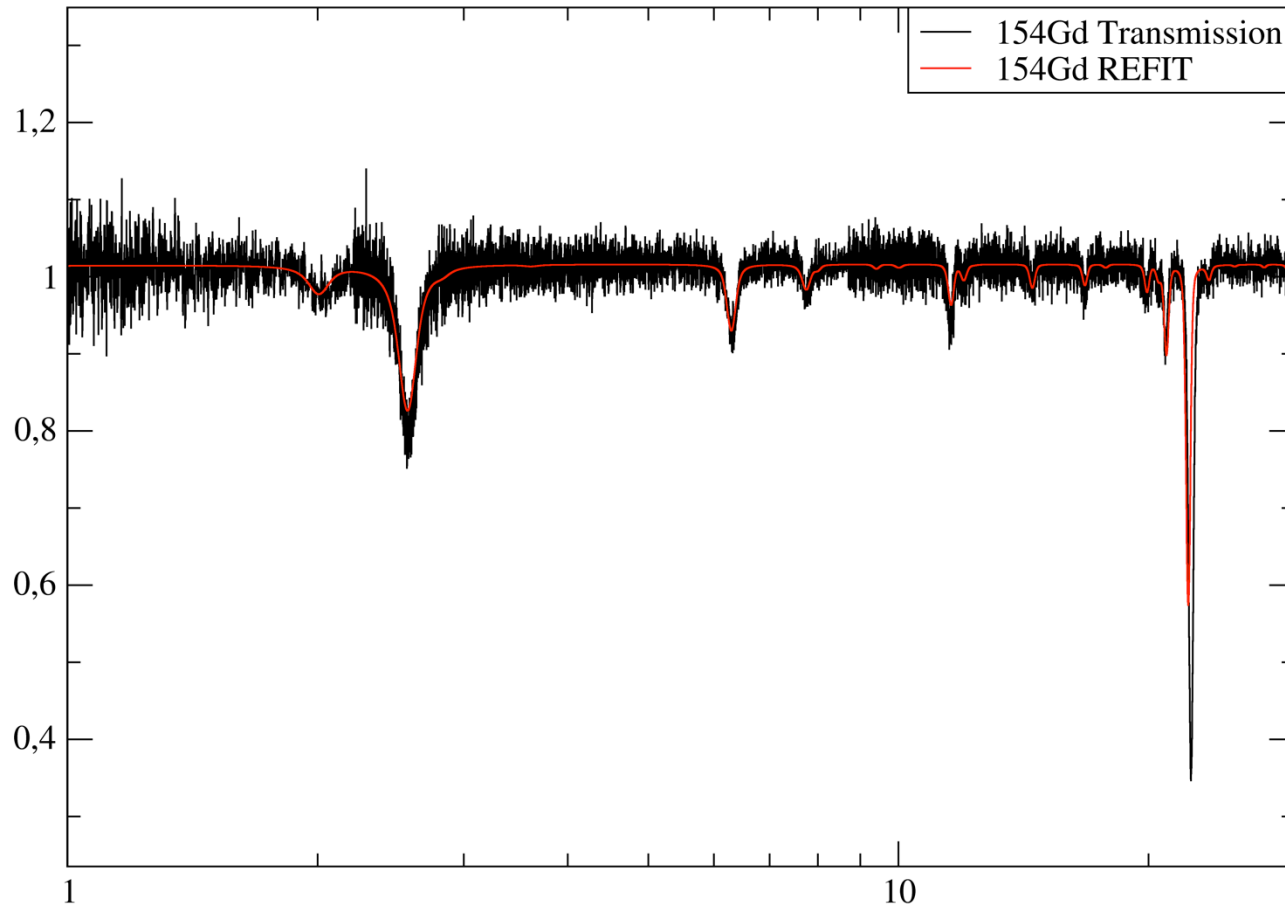
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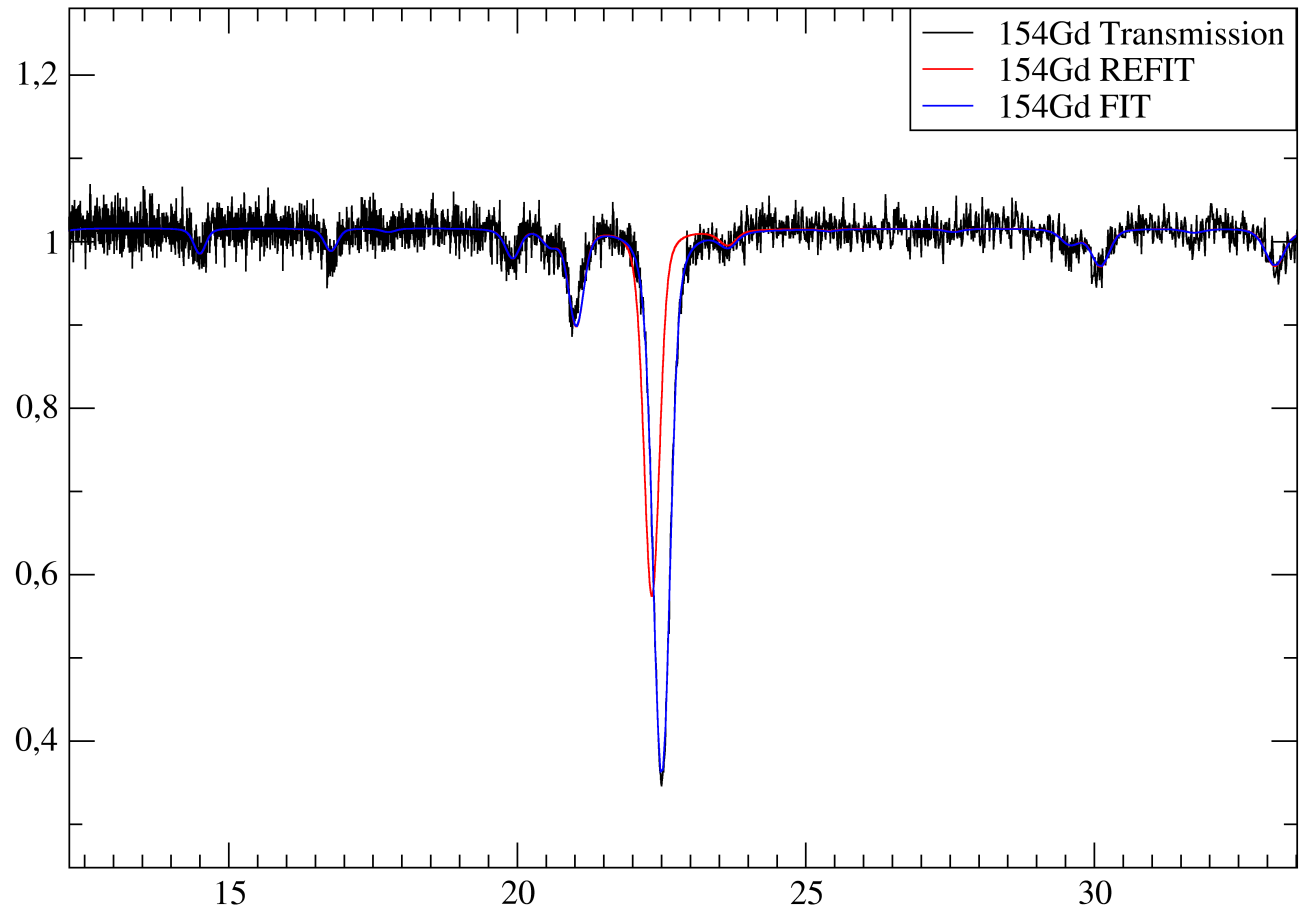
$^{154}\text{Gd}(n,\text{tot})$ @ GELINA



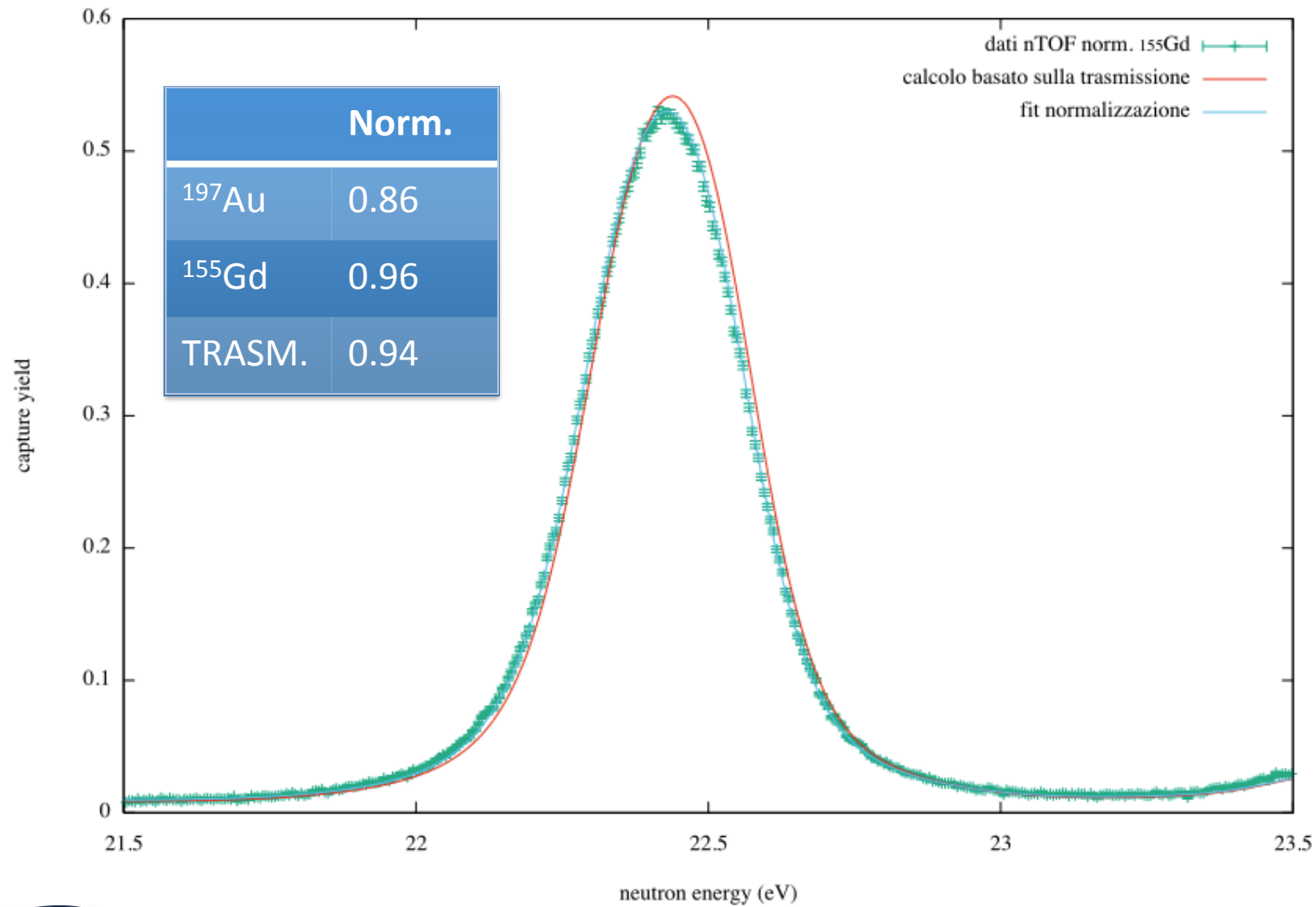
$^{154}\text{Gd}(n,\text{tot})$ @ GELINA



$^{154}\text{Gd}(n,\text{tot})$ @ GELINA



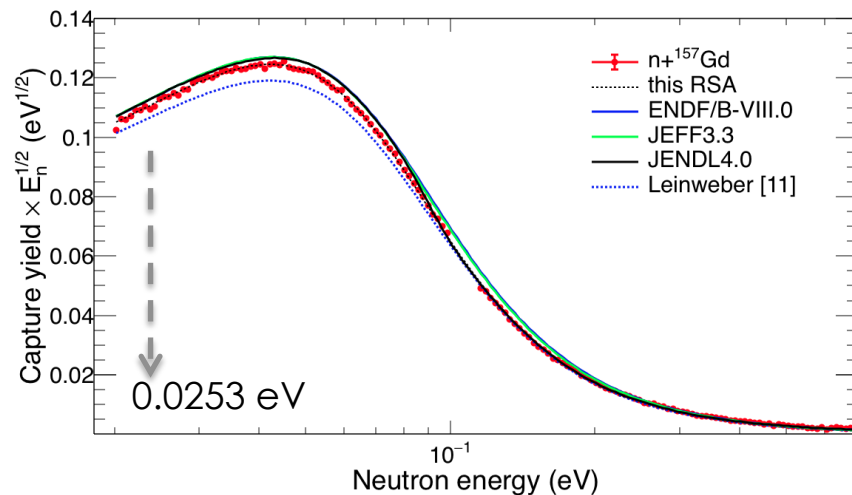
$^{154}\text{Gd}(n,g)$ @ n_TOF



$^{155,157}\text{Gd}(n,\gamma)$ @ n_TOF

EXFOR (entry #23400)

- Improved Resonances parameters
- Possibility to extend evaluation above 180 and 300 eV
- Statistical properties of neutron resonances



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Cross section measurements of $^{155,157}\text{Gd}(n,\gamma)$
induced by thermal and epithermal neutrons

n_TOF Collaboration



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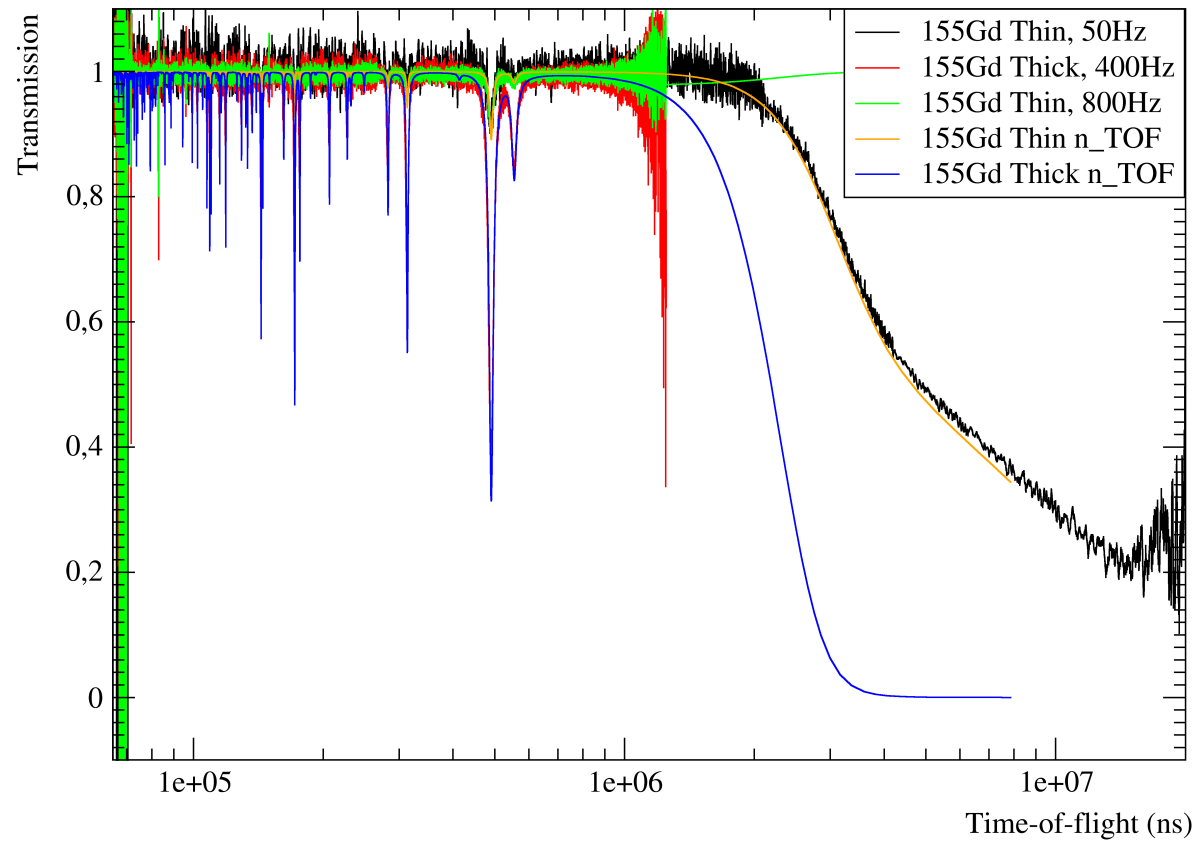
$^{155,157}\text{Gd}(n,g)$ @ n_TOF

Author or evaluation	Year	Thermal XS (kb) Gd-155	Deviation from ENDF	Thermal XS (kb) Gd-157	Deviation from ENDF
Møller (TOF)	1960	58.9 (5) *	- 3.4 %	254 (2) *	0.3 %
Ohno (TOF)	1968	61.9 (6) *	1.6 %	248 (4) *	- 2.1 %
Leinweber (TOF)	2006	60.2	- 1.2 %	226	- 12 %
Choi	2014	56.7 (21)	- 7.4 %	239 (6)	- 6 %
Mughabghab	2009	60.9 (2)	=	254.0 (8)	0.3 %
JENDL-4.0	2016	60.735	- 0.5 %	253.25	=
JEFF-3.3	2017	60.89	=	254.5	0.5 %
ENDF/B-VIII	2018	60.89	=	253.32	=
n_TOF	2019	62.2 (22)	+ 2.1 %	239.8 (84)	- 5.6 %

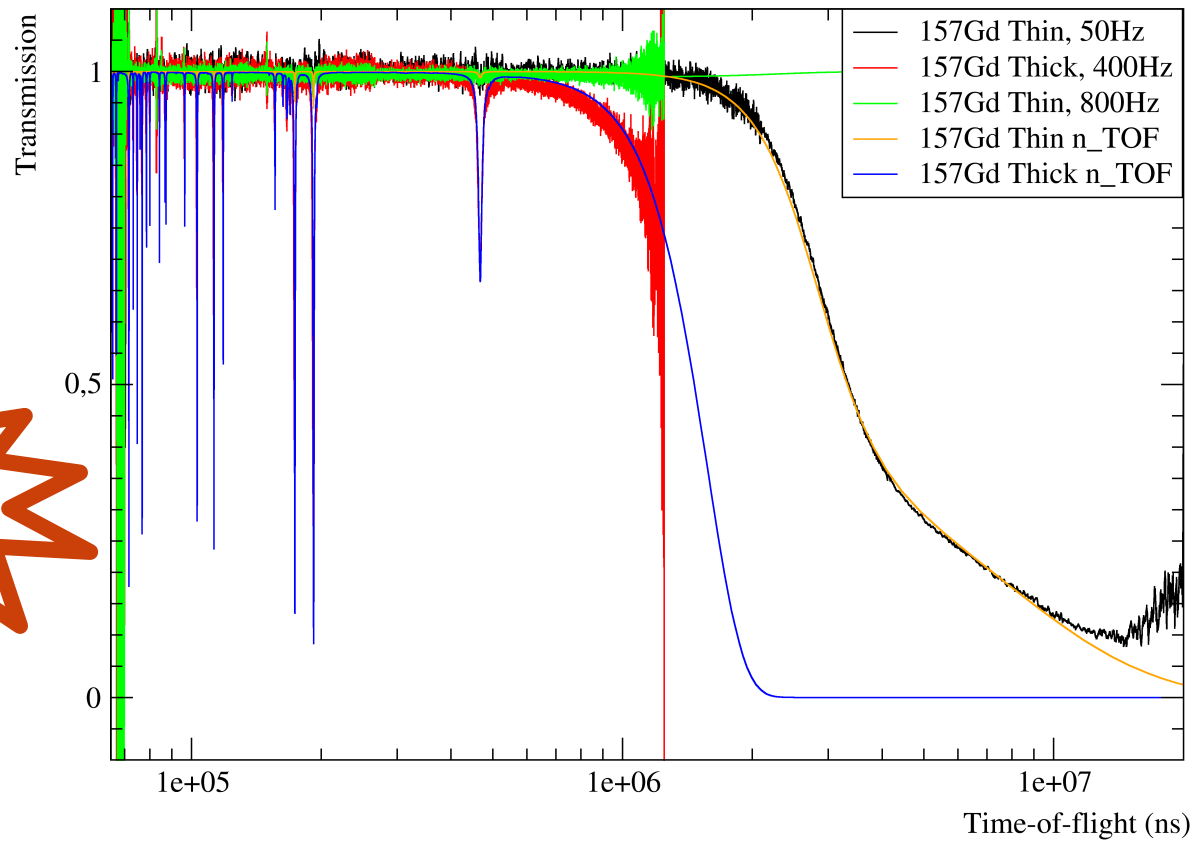
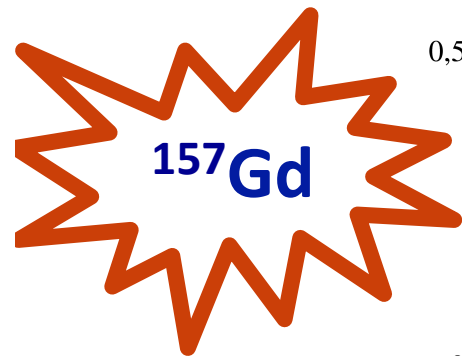
$^{155,157}\text{Gd}(n,\gamma)$ @ n_TOF

Source of uncertainty	$^{155}\text{Gd}(n,\gamma)$		$^{157}\text{Gd}(n,\gamma)$	
	near thermal	resonance region	near thermal	resonance region
Normalization	1.2%	1.2%	1.2%	1.2%
PHWT	1.5%	1.5%	1.5%	1.5%
Background	1.4%	$\approx 1\%$	1.0%	$\approx 1\%$
BIF	1.5%		1.5%	
Flux	1.0%	1.0%	1.0%	1.0%
Sample mass	1.0%	$< 0.2\%$	2.1%	$< 0.2\%$
Temperature		1%		1%
Total	3.2%	2.6%	3.5%	2.6%

$^{155,157}\text{Gd}(n,\text{tot})$ @ GELINA



$^{155,157}\text{Gd}(n,\text{tot})$ @ GELINA



155,157 Gd

Contatti/Richieste:

- Giovanni Romanelli (responsabile linea Vesuvio)
sviluppo rivelatore trasmissione GEM



- RPI (tramite Luiz Leal)
ripetere l'esperimento



DA FARE:

Distruggere i 2 bersagli sottili per ottenere l'informazione più accurata sulla massa → PSI ?





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