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Memo CP-D/470

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To: Distribution
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Subject: **Production cross sections for decay gammas**
(proposal for new quantity, with updates of dictionaries 31 and 236)

In a recent paper, for the first time we met production cross sections for decay γs (following β-decay) which could and should be compiled.

The beginning of this paper (L. Szentmiklósi et al., NIM/A, 564, 655, 2006) reads:

> *"In prompt gamma activation analysis (PGAA), radionuclides are also produced during the irradiation. Their decay γ-rays appear in the γ-spectrum along with the numerous prompt peaks. Since many of the decay peaks are among the most intense peaks of the spectrum, they are widely utilized in the routine analysis. Partial γ-ray production cross-sections (σ_γ) and k_0 values of the strongest decay lines have already been measured with high precision at our laboratory ....."*

So far only prompt γ production cross sections were compiled. We propose the following coding for production of decay γs:

…(N,G)…,PAR/DG,SIG

for the production cross section of a particular decay γ from neutron capture followed by β-decay.

Addition to Dictionary 31:

DG	(production of) decay gammas (usually given as PAR/DG)

Addition to Dictionary 236:

PAR/DG,SIG	CSP B	Cross section for production of a particular decay gamma

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