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Gamma calibration of a liquid scintillation neutron ball for electron scattering coincidence experiments at the S-DALINAC* — ●ANNA MARIA HEILMANN, MAKSYM CHERNYKH, PETER VON NEUMANN-COSEL, and ACHIM RICHTER — Institut für Kernphysik, Darmstadt, Germany

Coincidence inelastic electron scattering of the type $(e,e'n)$ represents a powerful tool to excite different multipole resonances in nuclei selectively and to study their subsequent decay. For the registration of emitted neutrons a detector ball with 13 liquid scintillators of the type BC501A is under construction at the S-DALINAC. A light output calibration of single scintillators by means of monoenergetic photon sources is presented. An essential part of the analysis is the Monte Carlo simulation of the pulse height distribution with the code PHRESP [1]. The calibration is performed by comparing the Compton edge positions of measured and simulated spectra. The analysis allows a determination of the energy-dependent pulse height resolution.

[1] T. Novotny, PTB Report PTB-N 28, Braunschweig, 1997.

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