

# Precise experimental determination of attenuation coefficient and its simulation

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With regard to progress achieved in computation methods of ionizing radiation transport in various materials, there is increased need for validation of such computer codes with experiments. Therefore, special measurement equipment has been built at Brno University of Technology. It serves for experimental determination of attenuation coefficients of various shielding materials. Special focus is put on inhomogeneous materials, new composites, and non-standard shielding bricks which are usually used for various inside shielding reinforcement. Various measurements methods are tested, different detectors (gas filled, semi-conductor, scintillation, etc.) are used. Dependence on measurement geometry is also tested. Basic build-up factor measurements have also been done and its investigation will continue. Experimental results are then compared with values obtained by Monte Carlo methods based codes such as MCNP and PHITS. Results are then compared with literature and possibility of the methodology further utilization is discussed in conclusions.

