

A Study on the Iterative Scheme for Stratified Shields Gamma Ray Buildup Factor Using Layer-Splitting Technique in Double-Layer Shield

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Abstract : The iterative scheme which is used to treat buildup factors for stratified shields of three-layers or more is being investigated here using the layer-splitting technique. The second layer in a double-layer shield was split into two equivalent layers and the scheme was implemented on the new 'three-layer' shield configuration. The results of such manipulation for water-lead and water-iron shields combinations are presented here for 1 MeV photons. It was found that splitting the second layer introduces some deviation on the overall buildup factor. This expected deviation appeared to be higher in the case of low Z layer followed by high Z. However, the iterative scheme showed a great consistency and strong coherence with the introduced changes.

Keywords : build-up factor, iterative scheme, stratified shields, radiation protection

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