Test on Bremsstrahlung

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Short description: Calculation of the bremsstrahlung yield (photon fluence per incident electron, differential in energy) - along the axis of 10-30 MV beams from thick targets of Al and Pb and - from 0-90° of 15 MV beams from thick targets of Be, Al and Pb.

Geant-val layout: Bremsstrahlung

Reference data: Photon fluence per unit energy per incident electron, and total photon fluence, integrated over energy, per incident electron is experimentally determined at 1 m from the target. Bremsstrahlung yield down to 0.22 MeV was measured on the axis of 10.09, 15.18, 20.28, 25.38, and 30.45 MeV electron beams [1]. In a separate experiment, bremsstrahlung yield down to 0.145 MeV was measured at angles out to 90° for 15.18 MeV electrons incident on thick Be, Al and Pb targets [2].

[1] B. A. Faddegon, C. K. Ross and D. W. Rogers (1990) Forward-Directed Bremsstrahlung of 10-30 MeV Electrons Incident on Thick Targets of Al and Pb, Med. Phys., 17, pp: 773-785.

[2] B. A. Faddegon, C.K. Ross and D. W. Rogers (1991) Angular distribution of bremsstrahlung from 15-MeV electrons incident on thick targets of Be, Al, and Pb, Med. Phys., 18, pp: 727 39.

Tested EM physics constructors:

- *EMStandard_opt0*
- *EMStandard_opt3*
- *EMStandard_opt4*
- *EmStandard_GS*
- *Livermore*
- *Penelope*

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