Progress on MDI and JINST

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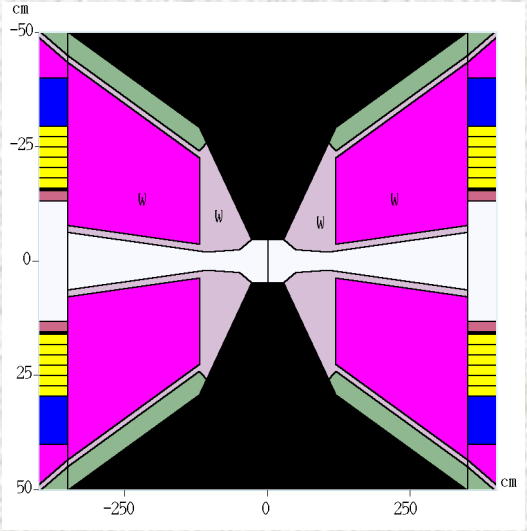
Higgs Factory MDI

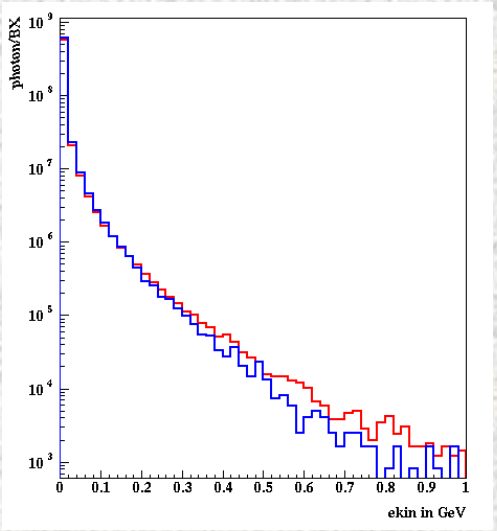
Simulations and analysis are completed to resolve the reported earlier difference (up to a factor of 10) in SLAC predictions (FLUKA-based set of tools) of the background rates in the detector compared to the Fermilab group results (MARS15).

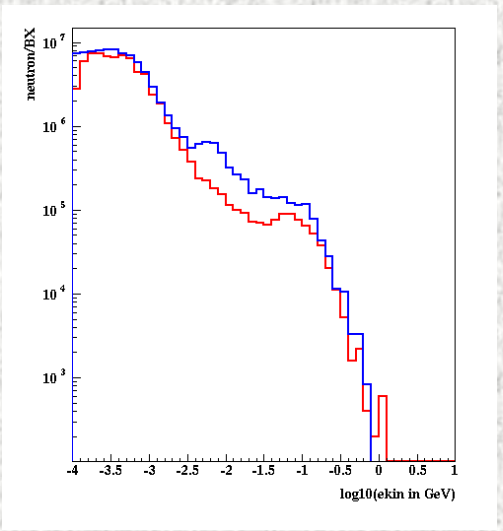
Using in the SLAC model the optimized Fermilab model parameters and the same definitions of the background rates, makes the SLAC results be very similar in shape and within a factor of two in value of the Fermilab data.

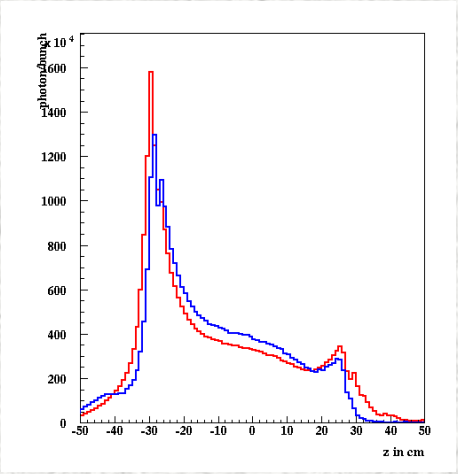
Possible reasons for that factor of two have been analyzed in the express runs, with current understanding that they are most likely related to the differences in the electromagnetic shower models in two codes.

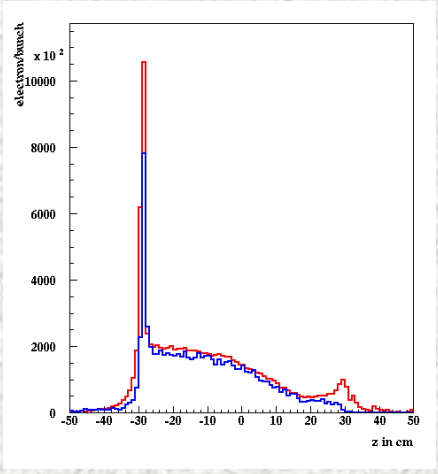
FLUKA (red) vs MARS-EGSx2 (blue): Particle numbers and energies entering detector from MDI

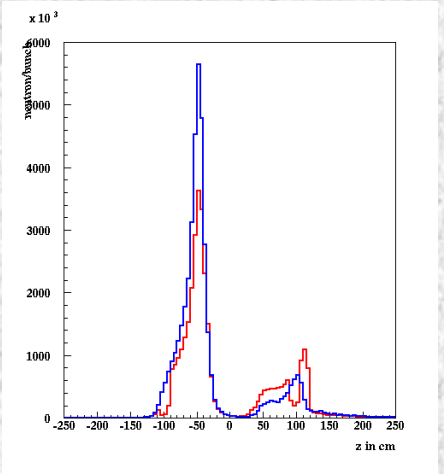












JINST paper: MDI, Backgrounds etc.

- Because of the above activities on resolving the SLAC-Fermilab difference in results for the Higgs Factory, no progress since last month on the HF draft, although all the pieces on lattice, magnets, magnet protection, MDI and background rejection are available.

- Same as last month (rather good) situation with the 1.5-TeV MC MDI and background parts.