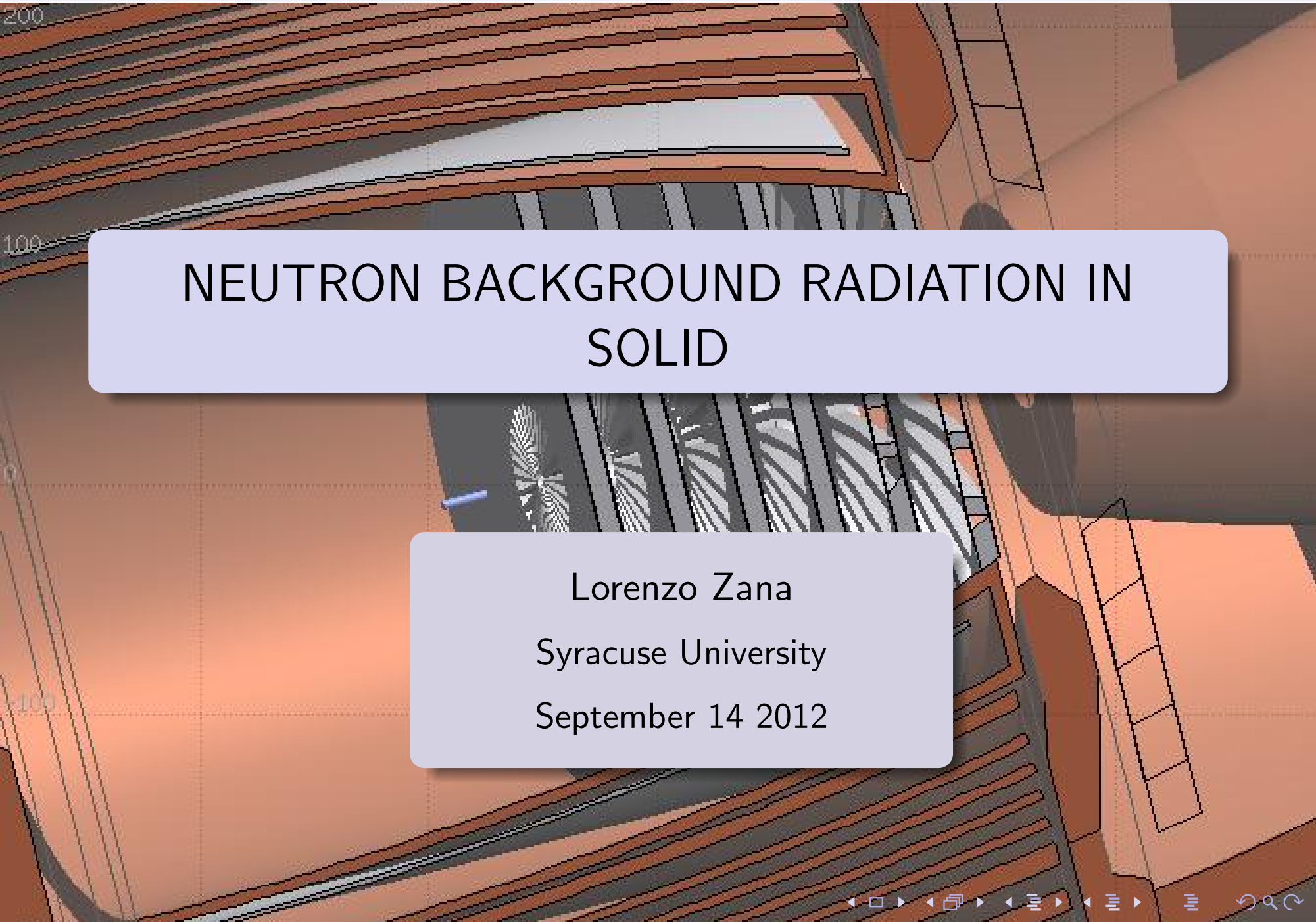


NEUTRON BACKGROUND RADIATION IN SOLID

Lorenzo Zana

Syracuse University

September 14 2012

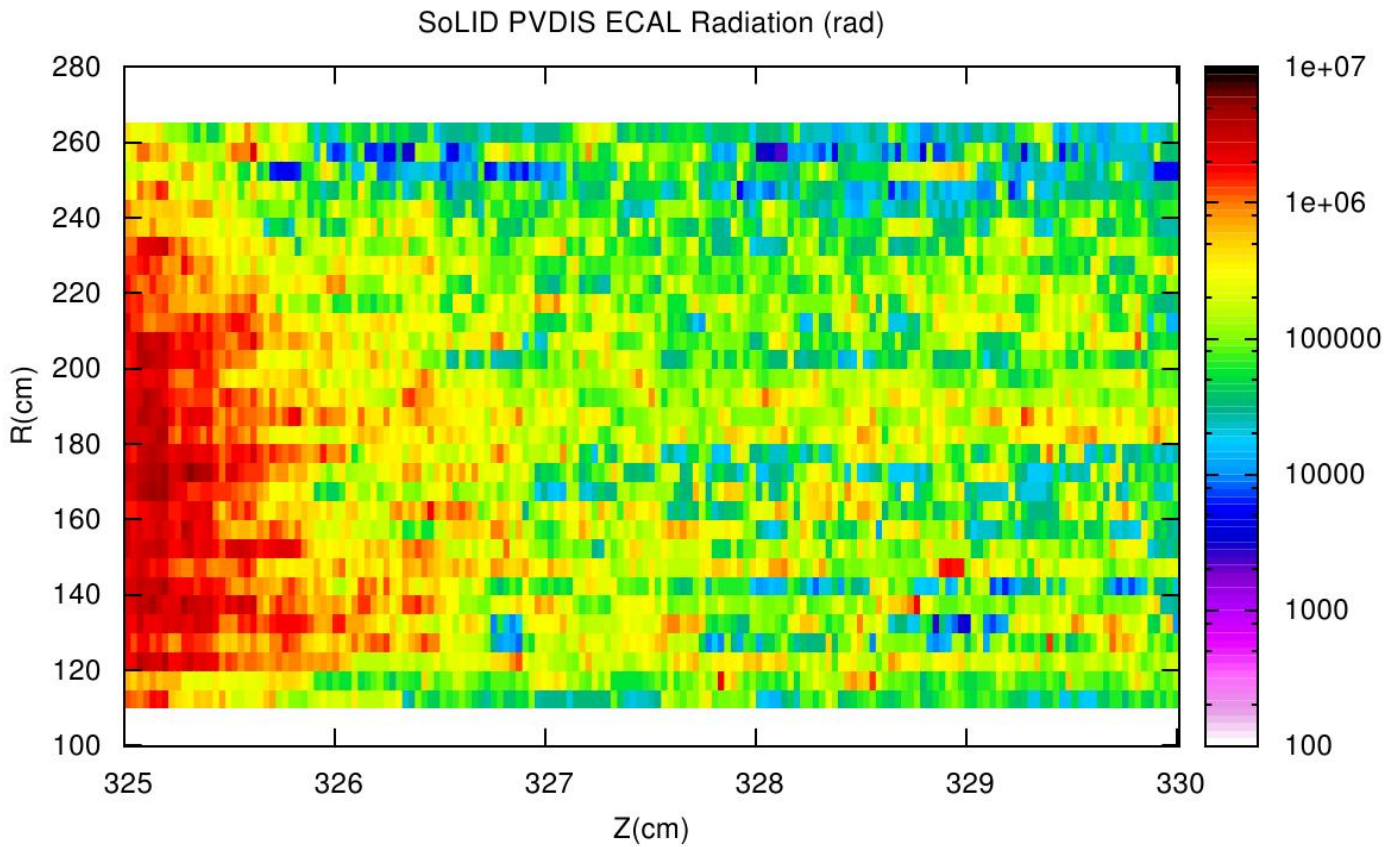
Questions and comments from last Dry Run

- EC radiation (PVDIS) discrepancy between FLUKA and GEANT4.

Questions and comments from last Dry Run

Discrepancy between FLUKA and Geant4

The dose by my Fluka simulation (last dry run) was an order of magnitude higher than the one obtained by Geant4



Questions and comments from last Dry Run

Discrepancy between FLUKA and Geant4

The dose by my Fluka simulation (last dry run) was an order of magnitude higher than the one obtained by Geant4

Cause

A small misalignment in the FLUKA design caused a slight line of sight from the target.

Questions and comments from last Dry Run

- EC background (PVDIS) discrepancy between FLUKA and GEANT4 Work in progress.
- GEANT4 and FLUKA each provide unique capabilities expanding the overall reach. FLUKA needs implementation of SoLID Physics production from the target.

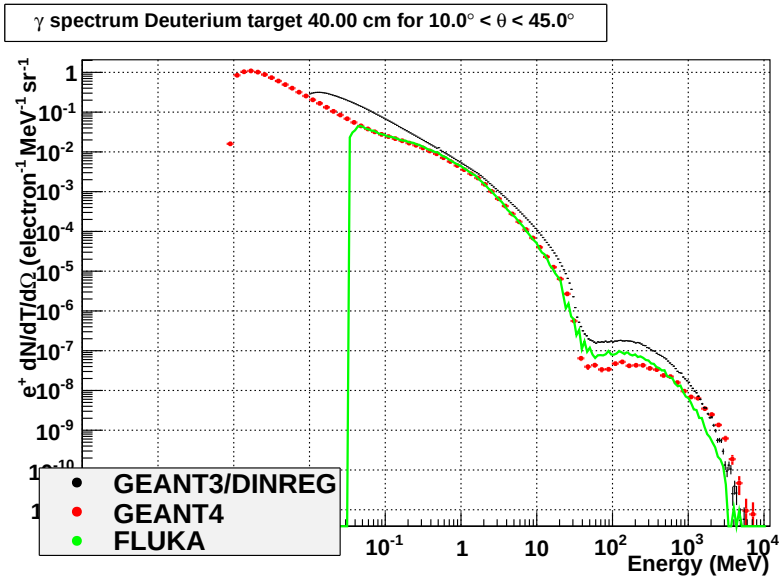
Questions and comments from last Dry Run

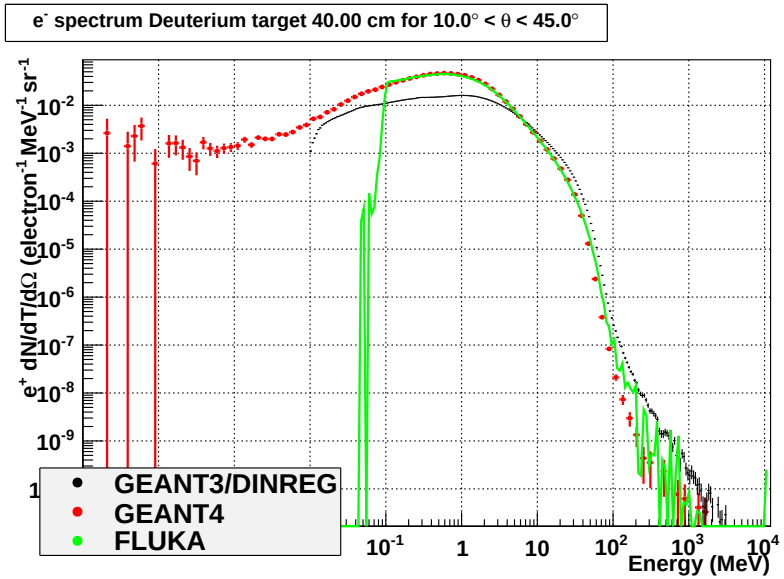
Implementation of common source from target for Geant4 and Fluka

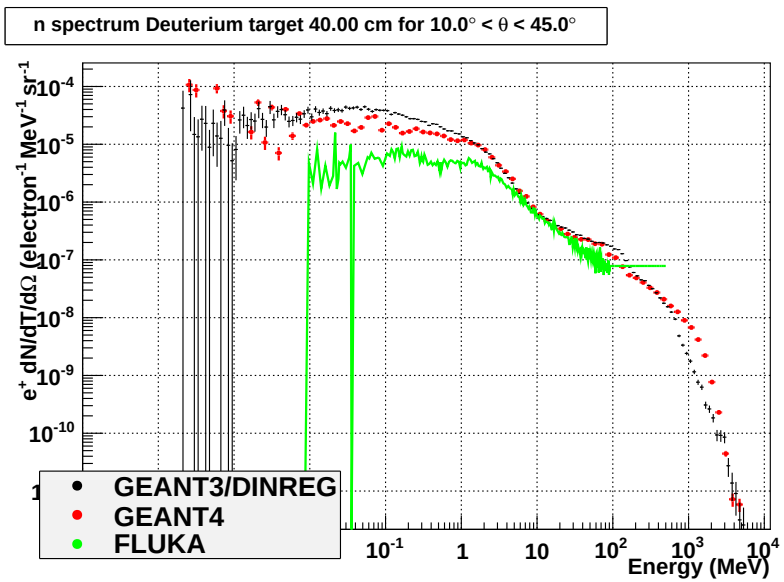
I am working on constructing a common source term from the target evaluating the imput from:

- FLUKA
- GEANT4
- GEANT3/DINREG (Pavel)

Questions and comments from last Dry Run







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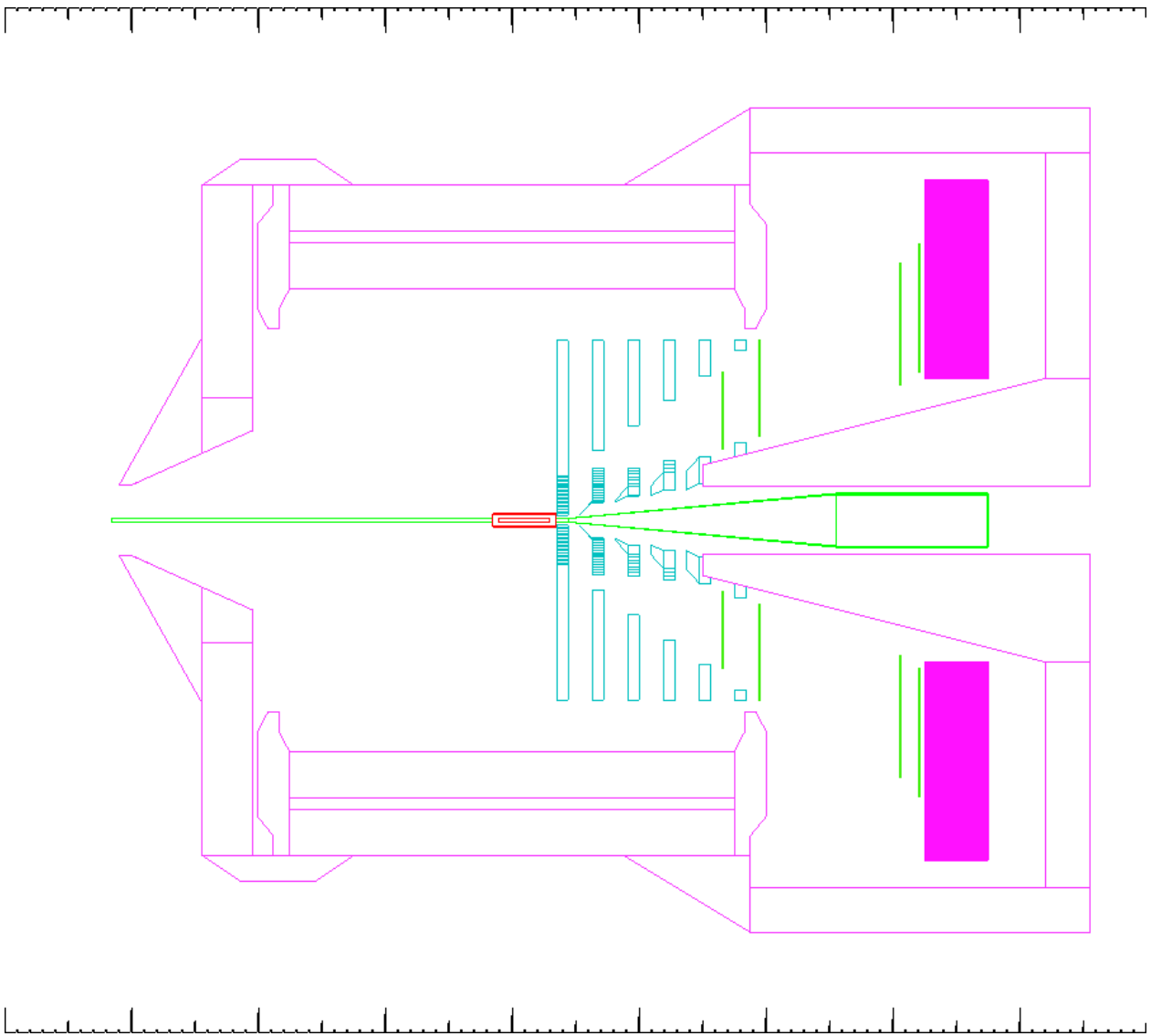
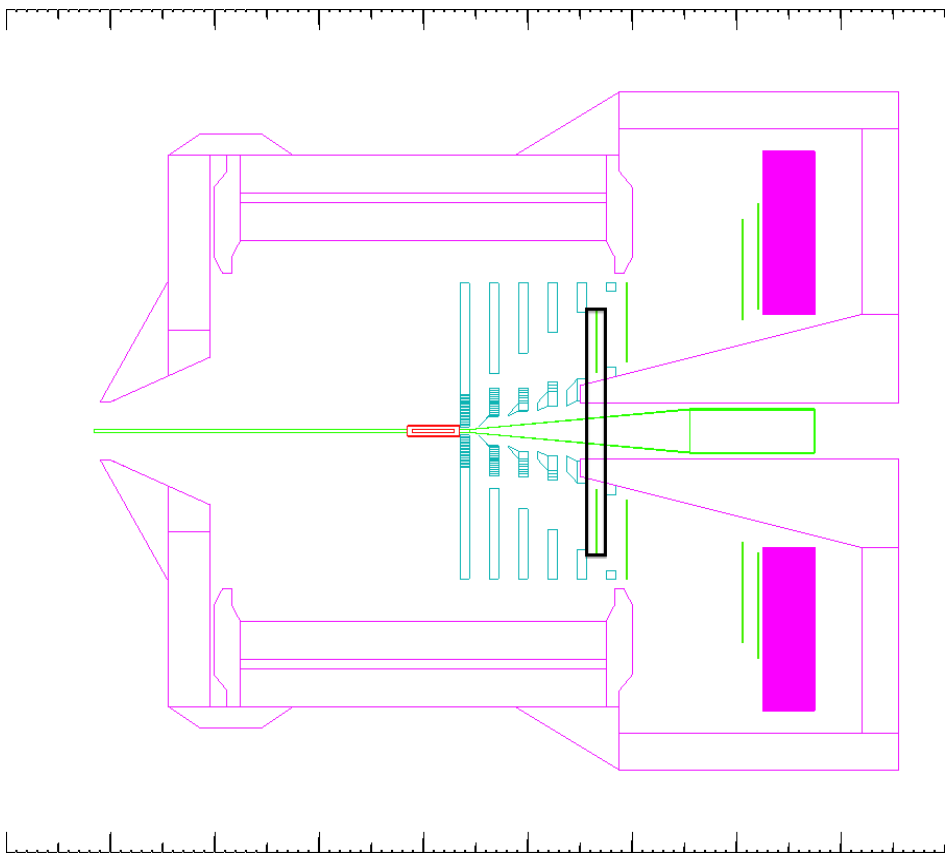


Main source of Neutron Radiation: Baffles, Target, Other?



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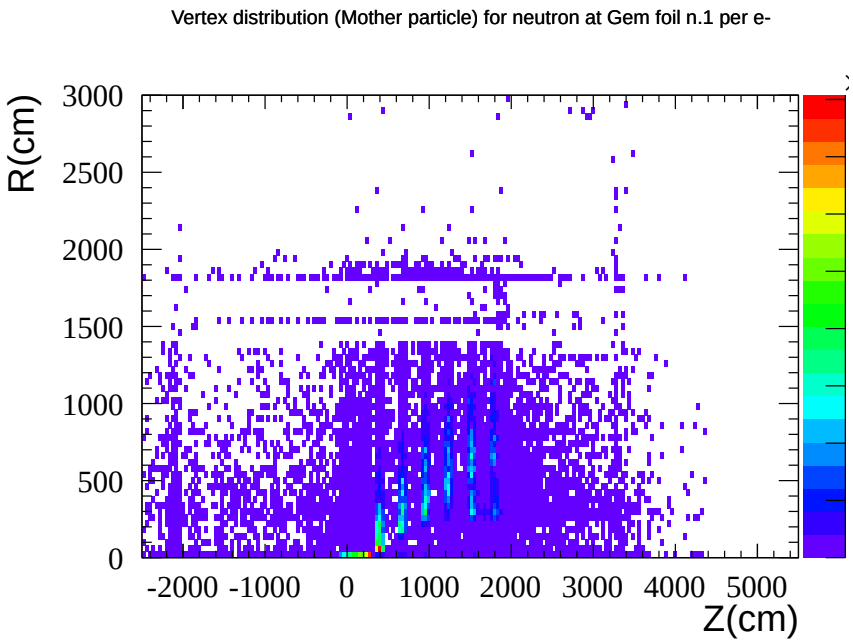

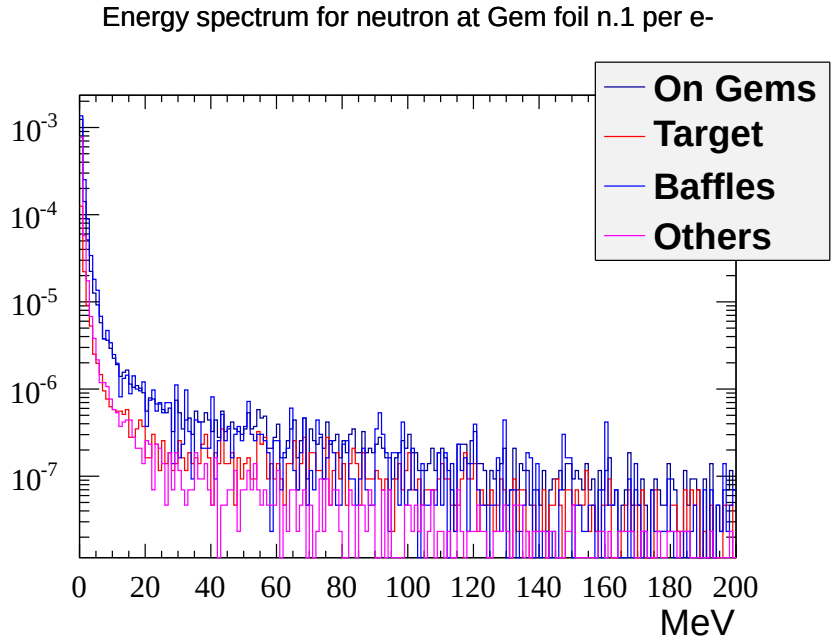

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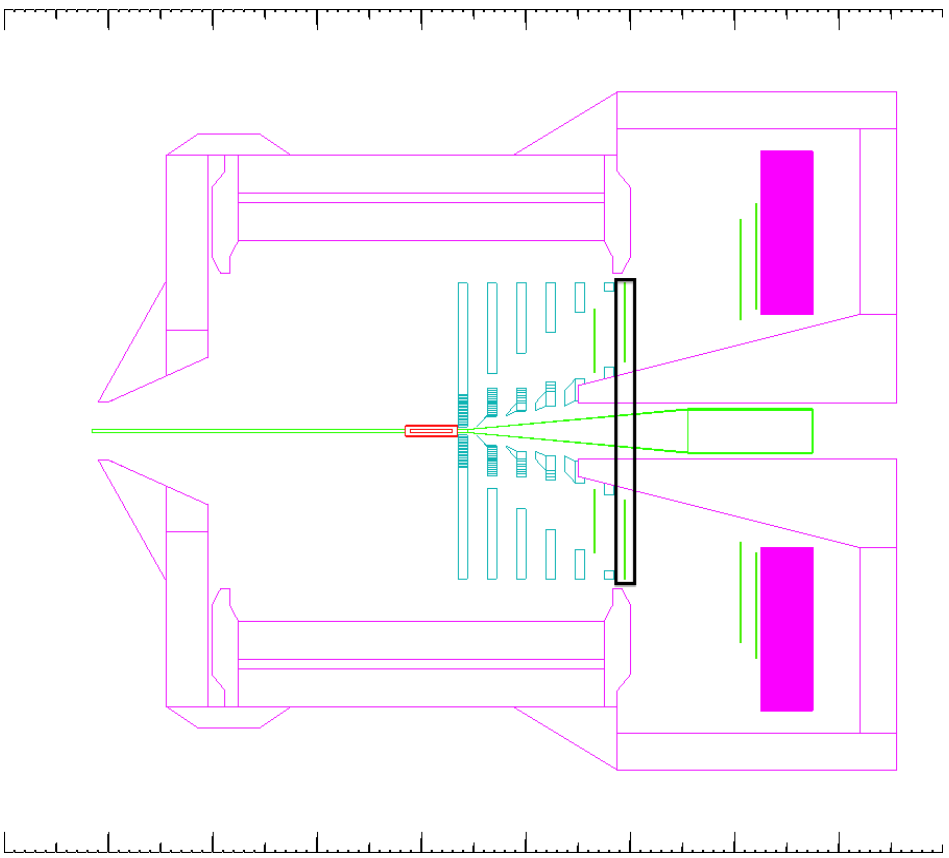

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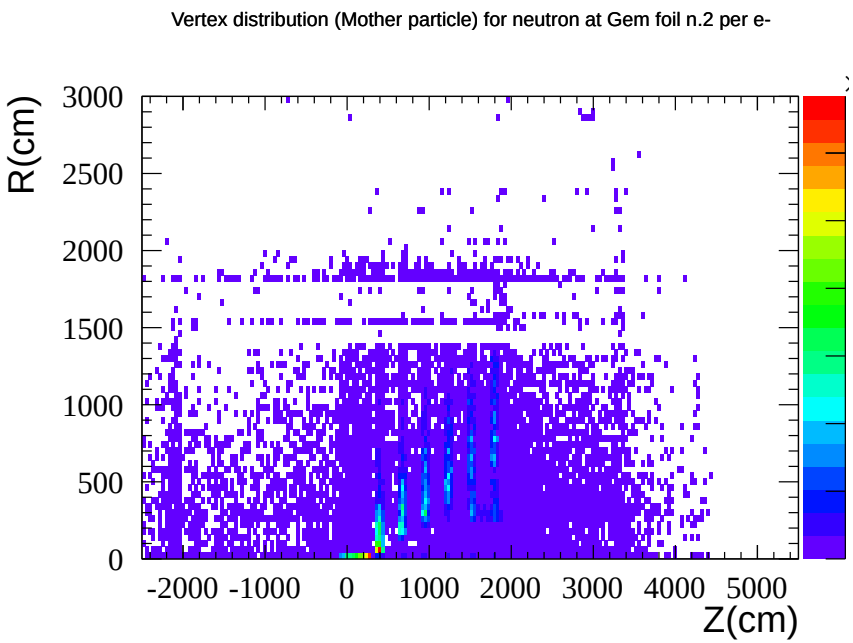

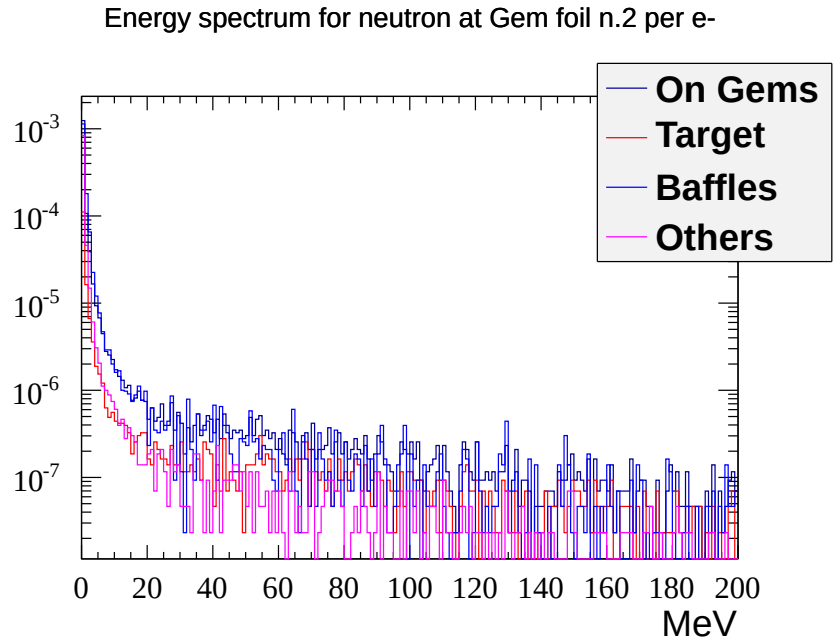

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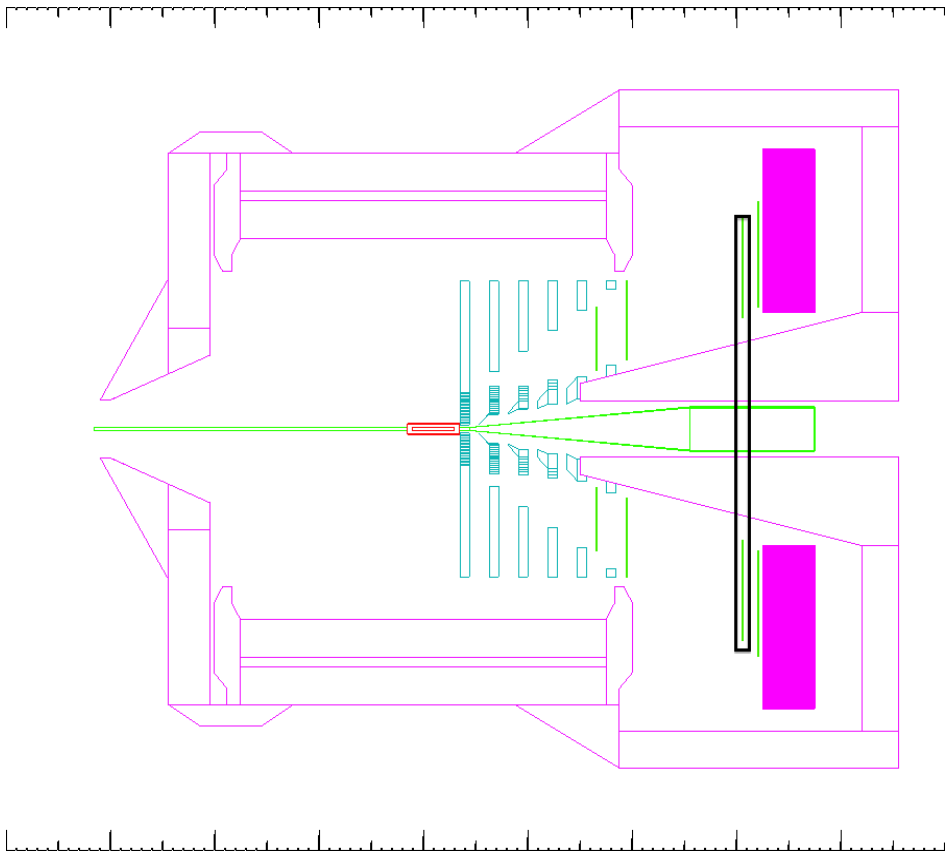

GEM 3

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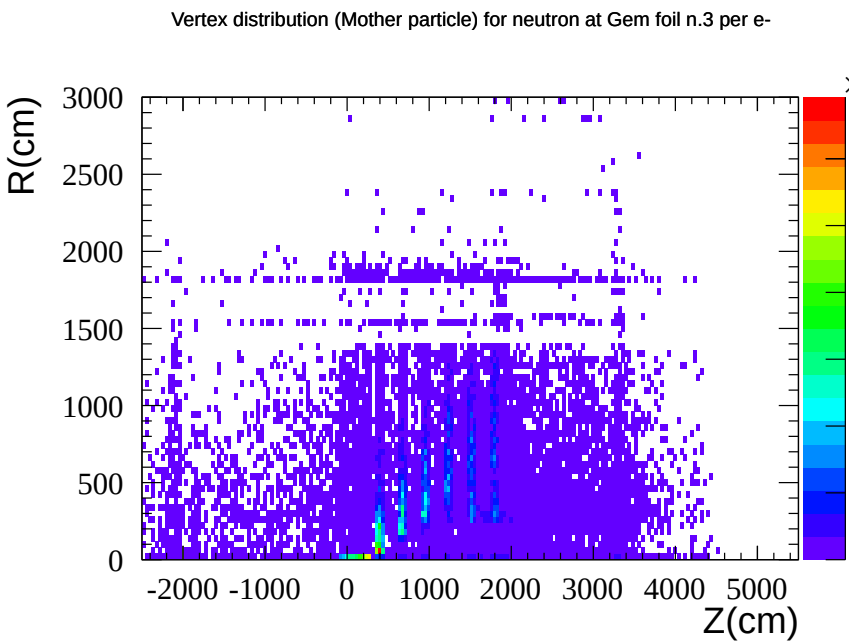

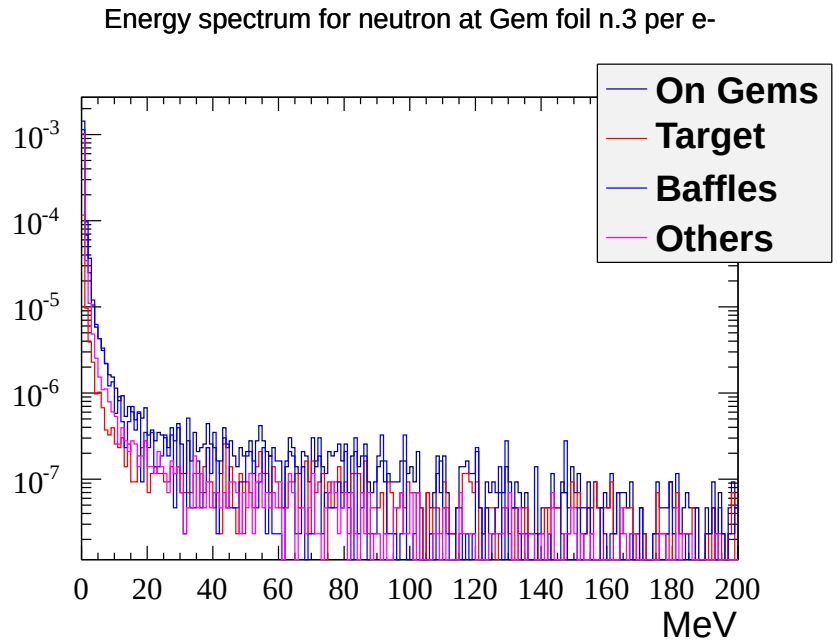

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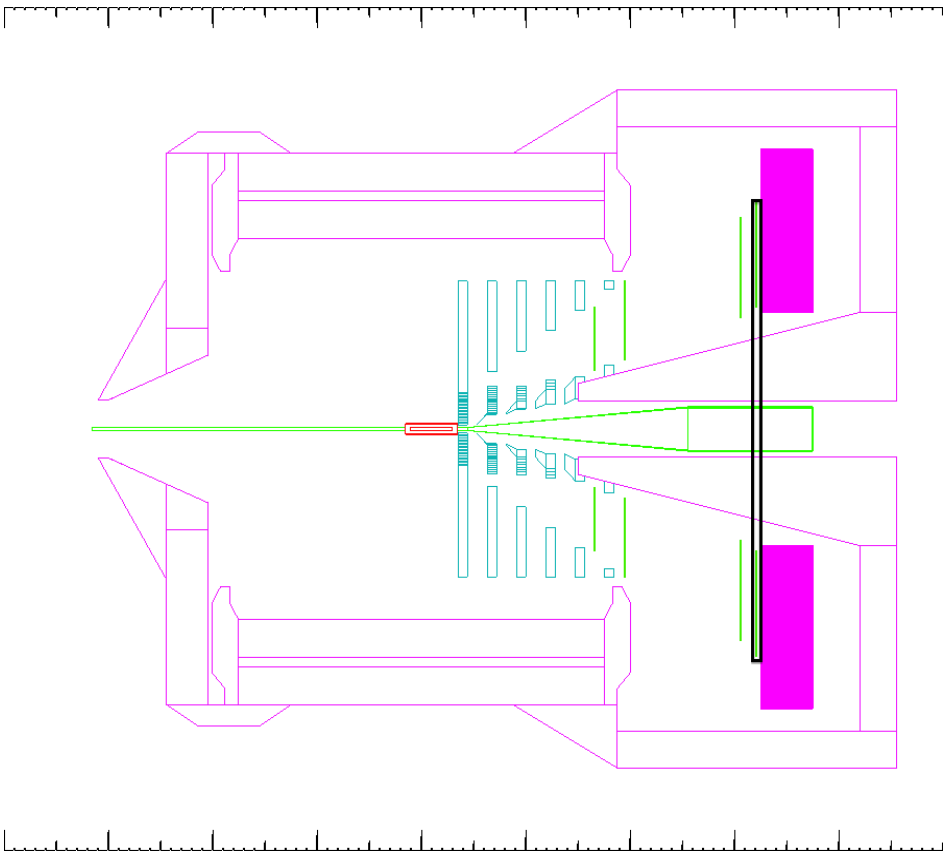

GEM 4

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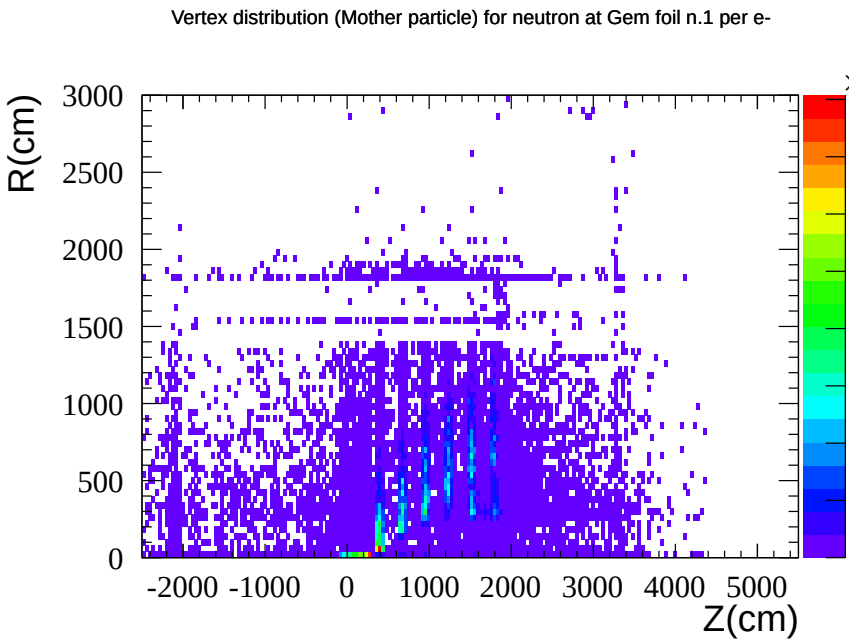

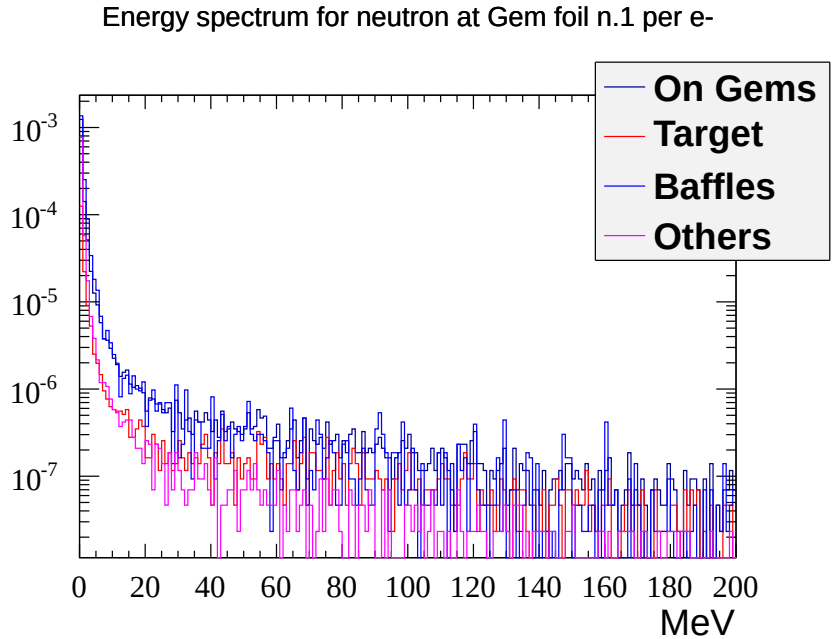

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- Realistic evaluation of the material activation in the setup during the experiment. To be addressed.