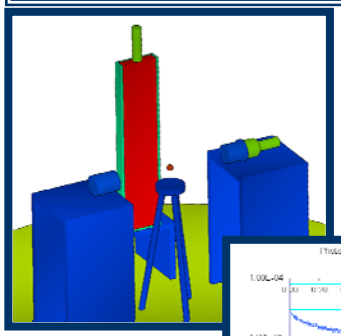
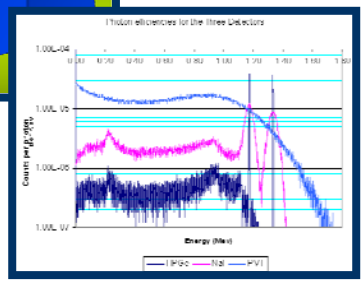
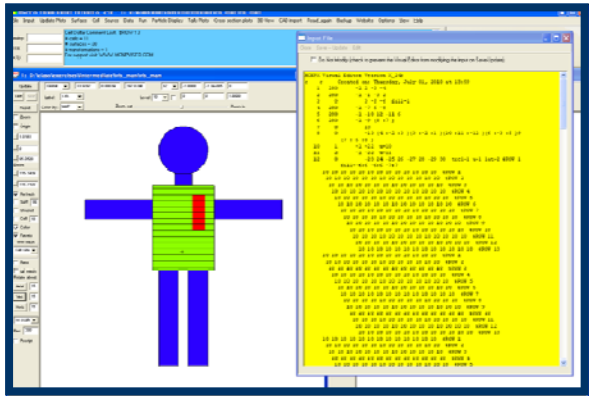
Advanced Geometries

As time permits, the workshop will cover advanced geometries such as photon detectors and voxelized phantoms.







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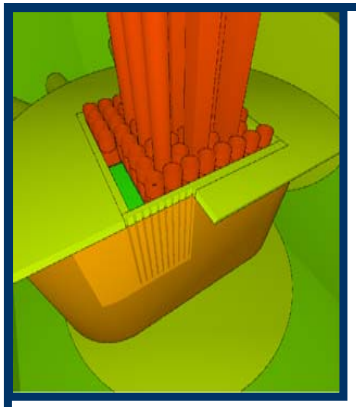
Testimonial



If you want to create really complex geometries you could always do it manually, but it so much easier with the Visual Editor!

In a professional environment such as the nuclear industry, our performance is usually judged by the efficiency and accuracy of our analyses but more importantly the quality assurance (QA) accompanying our work. The Visual Editor is thee perfect tool to do this! It enables non-MCNP experts to check geometry, dimensions, material composition and much more. It is also a great tool to efficiently generate some of the most complex geometries often seen in the nuclear environment, not even mentioning the absolutely spectacular 3D visualization capabilities.

Jan Vermaak— *NECSA, South African Nuclear Energy Corporation* (Las Vegas 2010 workshop)

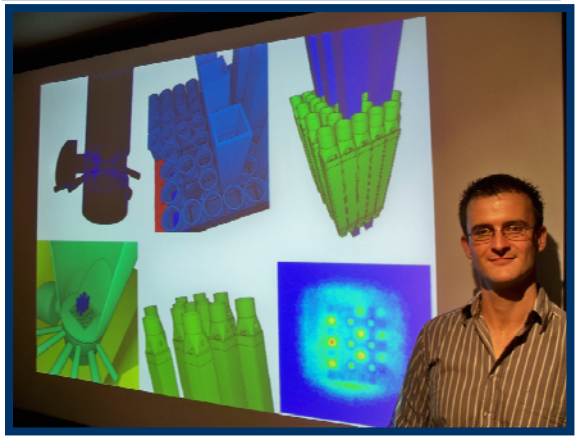
This workshop is most beneficial when participants bring input files that can take advantage of these advanced techniques. Time will be provided during the workshop for individual consulting

Visual Editor Consultants

www.mcnpvised.com

Intermediate MCNPX training using the Visual Editor

Joseph Chaput (Las Vegas 2010 workshop)
International Safety Research Inc (Canada)



Jan Vermaak— *NECSA, South African Nuclear Energy Corporation* (Las Vegas 2010 workshop)

Problems/Topics covered in this class.

(The class will cover as many topics as possible dependent on the experience/expertise of the workshop participants.)

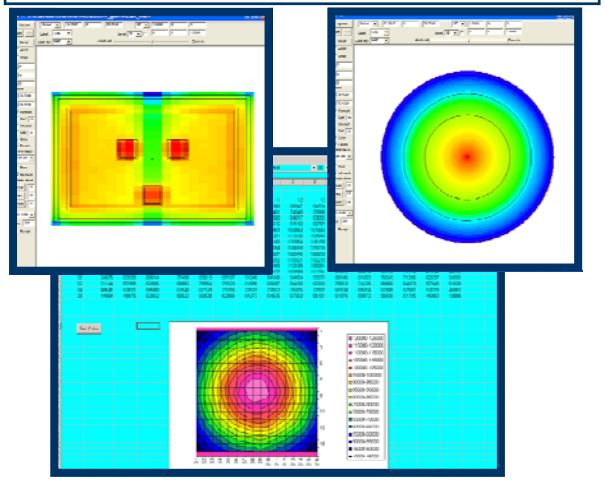
The intermediate workshop is different from the introductory workshop in that there are no step-by-step exercises. Instead, several complete geometry/source/tally problems are solved.

Review Problems

The intermediate workshop assumes a working knowledge of the content of the beginning class. The introductory workshop covered basic geometry and geometries with universes and lattices, materials, transformations, and sources. This material will be reviewed, as needed, depending upon the background of the participants.

For more experienced participants, two comprehensive problems provide a review of concepts while providing an opportunity to explore the software and refresh their skills.

Advanced Tallies, Mesh Tallies

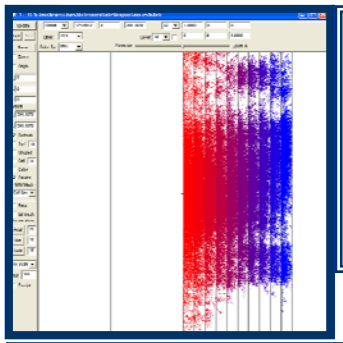


MCNP mesh tallies and the import of data into Excel will be covered.

Variance Reduction

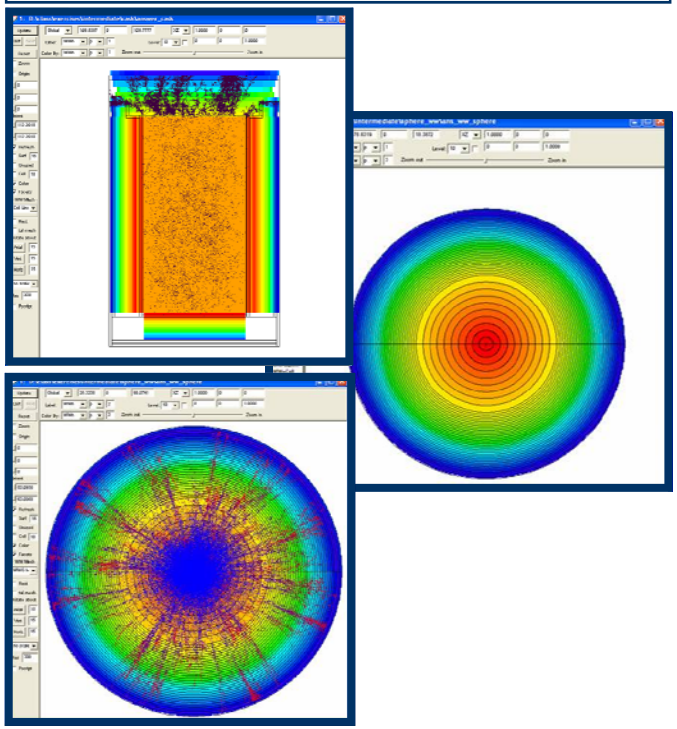
Variance reduction techniques covered in this workshop include: importances, weight windows (including the use of the weight window generator), DXTRAN spheres, and forced collisions.

Importances

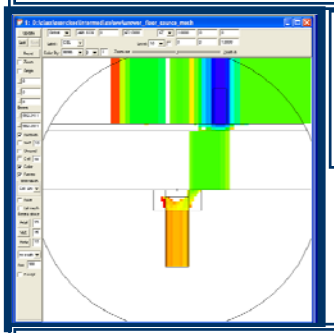


This geometry demonstrates the use of importances. Without specifying importances, this problem could not be solved without an impossibly long and computationally intensive run.

Weight Windows



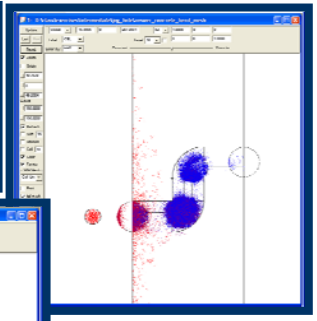
Variance Reduction continued

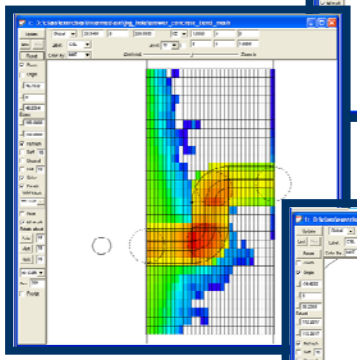


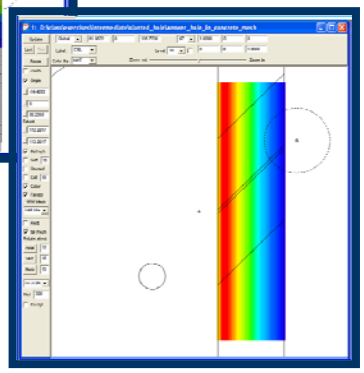
A more complex weight window example that uses the weight window generator.

DXTRAN Spheres

DXTRAN spheres and forced collisions will be used to calculate dose rates at the exit of a hole through a shield wall.







The Introductory class teaches you how to build the model. This class teaches you how to get the results out of it.