

Workshop 4: Automated Variance Reduction with A³MCNP for Shielding Problems (PSU)

Friday May 12, 2000

Workshop Registration: 12:30 PM - 1:00 PM

Workshop: 1:00 PM - 5:00 PM

by Prof. Ali Haghghat and colleagues at Penn State University (PSU)

This workshop focuses on major issues for automating variance reduction for Monte Carlo shielding applications..

PROGRAM

INTRODUCTION

- Monte Carlo Method
- Tallies
- Precision, Quality of Results (Sigma, R, FOM)

MAJOR ISSUES

- Importance of Variance Reduction
- Shielding Example

CADIS METHODOLOGY

- Importance Function
- Source and Transport Biasing
- Consistent Adjoint-Driven Importance Sampling

A³MCNP

- Implementation of CADIS in MCNP
- Automatic Sn Input Preparation (mesh, cross sections)
- A3MCNP Input and Procedures

BENCHMARKING OF A3MCNP

- Verification and Validation
- Performance for Shielding Problems

A³MCNP COMPUTER EXERCISES

- Demonstration
- Hands-on Exercises

Workshop Homepage: <http://www.hsact.com/physor02.htm>

Questions regarding the workshop should be directed to Prof. Ali. Haghghat (haghghat@psu.edu).