

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Monte Carlo Library Least Square (MCLLS) Method for Multiple Radioactive Particle Tracking in BPR¹ ZHIJIAN WANG, KYOUNG LEE, ROBIN GARDNER, North Carolina State University, CEAR TEAM — In This work, a new method of radioactive particles tracking is proposed. An accurate Detector Response Functions (DRF's) was developed from MCNP5 to generate library for NaI detectors with a significant speed-up factor of 200. This just make possible for the idea of MCLLS method which is used for locating and tracking the radioactive particle in a modular Pebble Bed Reactor (PBR) by searching minimum Chi-square values. The method was tested to work pretty good in our lab condition with a six 2" X 2" NaI detectors array only. This method was introduced in both forward and inverse ways. A single radioactive particle tracking system with three collimated 2" X 2" NaI detectors is used for benchmark purpose.

¹This project support by NERI-C contract from DOE.

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Date submitted: 24 Nov 2009

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