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Report on the Workshop on Monte Carlo Simulation of Neutron Scattering Instruments
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A Workshop on Monte Carlo Simulation of Neutron Scattering Instruments was held at Argonne National Laboratory on November 13-14, 1997. This workshop was organized and sponsored by the Spallation Neutron Source (SNS) Project. There were 17 attendees from Argonne National Laboratory (ANL), Brookhaven National Laboratory (BNL), Los Alamos National Laboratory (LANL), National Institute of Standards and Technology (NIST), Oak Ridge National Laboratory (ORNL), Institute Laue Langevin (ILL), Rutherford Appleton Laboratory (RAL), and Risø.

The primary goal of this workshop was to get this broad and diverse international group of developers and users of Monte Carlo software for simulating neutron scattering instruments to agree to pursue development of a common suite of such software in order to minimize duplication of effort. Secondary goals were to acquaint the participants with the Monte Carlo capabilities and efforts at the other laboratories and to establish a preliminary set of functional and operational requirements. All of these goals were achieved.

The most extensive efforts to date at using Monte Carlo simulations to model entire instruments have been those at Los Alamos. Most recently, Los Alamos has been developing a graphical user interface to facilitate the use of their software by non-experts. The current version of this user interface was demonstrated at the workshop, and the participants generally agreed that this interface represented a large improvement.

The participants agreed to develop a set of standards for a Monte Carlo simulation software suite that would meet the needs of the neutron scattering community. These standards will permit software developers at the various laboratories to create modules that work together rather than having each laboratory create and maintain its own complete suite of Monte Carlo codes. The Los Alamos and Oak Ridge groups agreed to take the lead in developing these standards. The participants also agreed to circulate information about this collaborative project to a broader cross-section of the community, and to set up e-mail lists and a web site to facilitate exchange of information among the collaborators. The ISIS representatives agreed to set up a computer site at ISIS that would mirror the current Los Alamos software site.

An International Advisory Committee was established to provide community input into the management of these processes. Members of the International Advisory Committee include Kent Crawford (ANL-chair), Ulrich Wildgruber (BNL), Luke Daemen (LANL), Lee Robertson (ORNL), Ian Anderson (ILL), and Mark Hagen (RAL). Others will be added as broader community involvement is established.

In summary, this was a very successful workshop that met all its goals. A process has been initiated for inter-laboratory collaboration to avoid duplication of effort in this important area of Monte Carlo simulation software. However, a large amount of detailed work needs to be done to make this collaboration a reality. The workshop participants established an International Advisory Committee ensure that this process continues in a timely fashion and that the results meet the needs of a broad community. For a copy of the workshop report, contact Kent Crawford (rk Crawford@anl.gov).