Radiation Safety Information Computational Center

No. 479   January 2005

"To profit from good advice requires more wisdom than to give it." -- Churton Collins
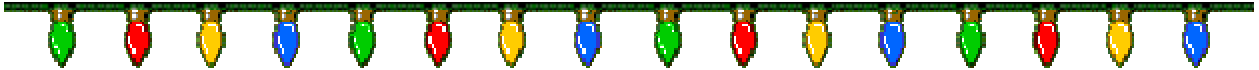
HAPPY NEW YEAR!

**RSICC staff will be on holiday from
December 18 - January 2, 2005.
We will reopen on January 3, 2005.
We wish you a safe and prosperous New Year.**

HAPPY HOLIDAYS FROM THE RSICC STAFF.

Changes to the Computer Code and Data Collection

There are no changes to the code/data collection this month, but we want to bring the following to your attention.

CCC-710/MCNP5 1.30

The MCNP5 1.30 release includes a new August 2004 version of the Visual Editor executable. This executable will be written to the MCNP5\Vised directory by the Windows installer. However, the link created in Start=>Programs (Start->Programs->MCNP5->vised) is set to the main MCNP5 directory, which was the location of VISED.EXE in previous MCNP5 distributions. This means if you install 1.30 over the previous version, you will still run the old version of the Visual Editor. As stated in the README file, it is recommended that Windows users who installed with the Install Shield installer should uninstall older versions of MCNP5 before installing a more recent version of MCNP5.

The simplest solution is to copy the MCNP5\Vised\vised.exe file to the main MCNP5 directory so that the shortcut will find the new executable. Another solution is to correct the path in your link for VISED. Right click on the Vised.lnk link from the Start menu, and then select properties. Change the target directory by adding '\Vised' to the directory path.

Users are advised to subscribe to the MCNP Forum and/or monitor the developers' website and Forum archives on the electronic notebook for news related to MCNP.

MCNP5	**http://www xdiv.lanl.gov/x5/MCNP**
Visual Consultants	**http://www.mcnpvised.com/**
e-notebook	**http://rsicc.ornl.gov/**

CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users and contributors advised of conferences, courses, and symposia in the field of radiation protection, transport, and shielding through this section of the newsletter. Should you be involved in the planning/organization of such events, feel free to send your announcements and calls for papers via email to **FINCHSY@ornl.gov** with "conferences" in the subject line by the **20th of each month**. Please include the announcement in its native format as an attachment to the message. If the meeting is on a website, please include the url.

Every attempt is made to ensure that the links provided in the Conference and Calendar sections of this newsletter are correct and live. However, the very nature of the web creates the possibility that the
links may become unavailable. In that case, please call or mail the contact provided. Below is a condensed list of the **conferences** only listed chronologically. More details (if available) are listed alphabetically following the table.

Condensed Table of Conferences

Name of Conference	Date and Location	Web Site	Abstract/Paper Due Date
Waste Management '05	Feb. 27-Mar. 3, 2005 Tucson, Arizona	**http://www.wmsym.org**	na
2005 HEART Conference	Mar. 21-25, 2005 Tampa, Florida	**http://erric.dasiac.com/Heart/Heart05.pdf**	passed
AIChE Spring National Meeting	Apr. 10-14, 2005 Atlanta, Georgia	**http://www.aiche.org/ conferences/**	Feb. 11, 2005
Monte Carlo 2005 Topical Meeting	Apr. 17-21, 2005 Chattanooga, Tennessee	**http://MonteCarlo2005.org**	passed
Using MCNP5 for Medical Physics Applications	Apr. 17, 2005 (1-5pm) Chattanooga, Tennessee	**http://montecarlo2005.org**	na
Twelfth International Symposium on Reactor Dosimetry	May 8-13, 2005 Gatlinburg, Tennessee	**announcement / call for papers in pdf** **http://reactordosimetry.com**	passed
2005 International Congress on Advances in Nuclear Power Plants (2005 ICAPP)	May 15-19, 2005 Seoul, Korea	**http://www.icapp2005.org**	passed
International Nuclear Chemistry Society (INCS)	May 22-29, 2005 Kusadasi, Turkey	**http://incs.ege.edu.tr/1st-INCC.html**	passed
ANS Annual Summer Meeting	June 5-9, 2005 San Diego, California	**http://www.ans.org/meetings/**	
12th International Conference on Emerging Nuclear Energy Systems (ICENES 2005)	August 21-26, 2005 Brussels, Belgium	**http://www.sckcen.be/ sckcen%5Fen/activities/conf/conferences/icenes2005/**	
Seventh Topical Conference on Nuclear Applications of Accelerator Technology "AccApp05"	Aug. 28-Sept. 1, 2005 Venice, Italy	**http://AccApp05.infm.it**	Mar. 31, 2005

Name of Conference	Date and Location	Web Site	Abstract/Paper Due Date
230th American Chemical Society National Meeting	Aug. 28-Sept. 1, 2005 Washington, D.C.	**www.cofc.edu/~nuclear** (future web site)	April 2005
XIX Nuclear Physics Divisional Conference (NPDC19) of the European Physical Society	Sept. 5-9, 2005 Pavia, Italy	**http://www.pv.infn.it/~npdc19**	NA
International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear Biological Applications (M&C 2005)	Sept. 12-15, 2005 Avignon, France	**http://mcavignon2005.cea.fr**	Jan. 15, 2005
2005 NCSD Topical Meeting	Sept. 19-22, 2005 Knoxville, Tennessee	**http://meetingsandconferences.com/ncsd2005/**	Jan. 7, 2005
Eleventh International Topical Meeting on Nuclear Reactor Thermal Hydraulics	Oct. 2-6, 2005 Avignon, France	**http://nureth11.com/**	passed

MCNPX Workshops

Lead Teachers: Drs. John Hendricks, Gregg McKinney, Laurie Waters
Organizer: HQC Professional Services   Contact: **bill@mcnpxworkshops.com**
More Information: **http://mcnpxworkshops.com**   MCNPX homepage: **http://mcnpx.lanl.gov**

Jan. 24-28, 2005	Introductory	San Diego, CA
Feb. 28-Mar. 4	Intermediate	Mol, Belgium
June 13-17	Introductory	Santa Fe, CA
Aug. 1-5	Introductory	Seoul, Korea
Sept. 19-23	Intermediate	Boston or D.C.
Nov. 7-11	Introductory	Santa Fe, CA

MCNPX is the LANL all-particle, all-energy (eV-TeV) Monte Carlo transport code based on MCNP4C, LAHET, CEM, etc. MCNPX has been in active development since 1995, sponsored by the particle accelerator community. It has now become an accepted tool for a broad range of applications by nuclear engineers, physicists, and scientists. The MCNPX development effort has expanded the use of

the Los Alamos tools to applications such as APT, waste transmutation, accelerator shielding and health physics, particle beam cancer therapy, space shielding and cosmic ray analysis, single event effects in semiconductors, radiography, and more detailed analysis of the effects of light and heavy ions in matter. In addition, the entire functionality of MCNP4C is retained. New variance reduction and data analysis techniques, many adapted from high-energy accelerator methodologies, have also been added, such as the extensive "mesh tally" capability which allows up to 3-d plotting of particle tracks, fluence and fluence-derived quantities, energy deposition, next event estimator generation contributions and particle sources.

The workshops include hands-on instruction, generally on PC Windows machines. Subject to participant export approval for the MCNPX beta test team, participants will be able to access the Fortran-90 version of MCNPX 2.4, the LA150 (150 MeV) cross-section data for over 40 isotopes for incident neutrons and protons and 12 for photonuclear interactions, and a notebook of viewgraphs. Follow-up consultation for class participants will be provided.

The classes are taught by experienced MCNPX code developers and instructors. More information on code versions and capabilities is available at MCNPX Workshops web site **http://mcnpxworkshops .com**.

Monte Carlo 2005 Topical Meeting

Monte Carlo 2005 will be held **April 17-21, 2005,** (Sunday-Thursday). The theme of the conference is "The Monte Carlo Method: Versatility Unbounded in A Dynamic Computing World." The conference site is the Chattanooga Marriott and Convention Center in Chattanooga, Tennessee. The conference will be hosted by the American Nuclear Society (ANS) Oak Ridge/Knoxville Section, with ANS Radiation Protection and Shielding Division (RPSD) as the sponsoring division and Mathematics and Computations Division (MCD) as a co-sponsor. Co-sponsors also include Oak Ridge National Laboratory (ORNL), Radiation Safety Information Computational Center (RSICC) and the Organization for Economic Cooperation and Development (OECD) Nuclear Energy Agency Data Bank (NEADB).

The Monte Carlo method and its applications have been frequently addressed at several major conferences and workshops organized in recent years in the area of nuclear applications. Monte Carlo topics have included radiation shielding, radiation physics, medical physics, and high energy physics. Significant developments have taken place in computational and data issues, resulting in state-of-the-art computer codes and tools. Monte Carlo 2005 is the next in a series devoted to the topic, following Monte Carlo 2000, which was held in Lisbon, Portugal, in October 2000.

Conference topics will include: Methods Advancements (Physics) (proton transport, neutron transport, gamma transport, electron transport, heavy ion transport); Nuclear Data Advancements (proton transport, neutron transport, gamma transport, electron transport, heavy ion transport); Mathematical and Computational Advances (experiments & benchmarks, mathematical advances, computational advances, visualization); Applications (reactor, medical, accelerator, neutron science, dosimetry, shielding, fuel cycle, waste management, space & aviation, fusion, criticality safety, non-nuclear applications).

The website is **http://MonteCarlo2005.org**. Full papers are due January 21, 2005. For information contact Bernadette Kirk (**kirkbl@ornl.gov**, 865-574-6176), General Chair, or Jeff Johnson (**johnsonjo@ornl.gov**, 865-574-5262), Technical Chair.

Using MCNP5 for Medical Physics Applications

Sponsor: Computational Medical Physics Working Group
Cost: Free
Sunday, **April 17, 2005**, 1-5PM at the Monte Carlo 2005 Conference at the Chattanooga Convention Center, Chattanooga, Tennessee. (**http://montecarlo2005.org**)

"Using MCNP5 for Medical Physics Applications," by Tim Goorley of the MCNP Development Team, X-5, Los Alamos National Laboratory, and Dick Olsher of the HSR - 4, Los Alamos National Laboratory.
Monte Carlo techniques are increasingly popular in many medical physics applications. This half-day tutorial focuses on how to use new and old MCNP5 features for neutron, photon and electron transport problems. The tutorial will include handouts and some demonstrations by the instructor, but not hands-on computer activities for the student The following is a draft of the topics which will be covered:

1) Overview of new MCNP5 features
        a) Mesh tallies,
        b) Photon Doppler Broadening,
        c) > 2.1 billion histories,
        d) Lattice tally enhancements
2) Geometries and Modelling
        a) MIRD Phantoms,
        b) CT_based geometries
3) Sources
4) Tallies
        a) Calculating dose w/ different tallies,
        b) Flux to Kerma factors (DE DF cards),
        c) Calculating reaction rates
5) Misc
        a) S(alpha, beta) neutron scattering treatment,
        b) Simple variance reduction,
        c) Benchmarking Studies - QUADOS,
        d) using PTRAC file for coincident counting.

2005 International Congress on Advances in Nuclear Power Plants (2005 ICAPP)

The 2005 International Congress on Advances in Nuclear Power Plants will be held from **May 15-19, 2005**, in Seoul, Korea. There is no doubt that continuing support and interest will be a crucial element for the success of the first ICAPP held in Asia.
The ICAPP has grown in stature since the first congress was held in 2002 to share ideas and visions for advances in nuclear power plants among operators, researchers and scholars. The 2005 ICAPP will attract the attention of the world's nuclear experts with many outstanding presentations of new developments and approaches in various studies and industrial projects. Please take the opportunity to share the results of your latest studies at the 2005 ICAPP. To ensure a successful congress, the 2005 ICAPP will consist of invited plenary sessions and topical technical sessions, as follows:
        1. Water-Cooled Reactor Programs and Issues,
        2. High Temperature Gas-Cooled Reactors,
        3. Long-Term Reactor Programs and Strategies,
        4. Operations, Performance and Reliability Management,

5. Plant Safety Assessment and Regulatory Issues,
6. Thermal Hydraulic Analysis and Testing,
7. Core and Fuel Cycle Concepts and Experiments,
8. Materials and Structural Issues,
9. Nuclear Energy and Sustainability including Hydrogen, Desalination and Other Applications, and
10. Near-Term Deployment.
Visit the website **http://www.icapp2005.org** to find out more about the 2005 ICAPP in Seoul.

International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear and Biological Applications

The International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear and Biological Applications will be held at the 'Palais des Papes,' Avignon, France, **September 12-15, 2005**.

The meeting offers an environment for interdisciplinary exchange among research in the nuclear field and comprises 19 General Technical sessions and 13 Invited Technical sessions. Details on the sessions and on the organization of the meeting are given at the web site: **http://mcavignon2005.cea.fr/**.

Papers are solicited in all areas of computational and mathematical methods and related disciplines including reactor physics, material sciences, shielding, fluid-dynamics, medical and biological applications, environmental sciences, fundamental mathematics and benchmarking.

We are now less than one year from the meeting dates and our web has been opened for the submission of extended summaries (1000 words < 1500 words). The deadline for summary submission is January 15, 2005.

Instructions on summary submission are given in the web pages under the 'Authors' button.

Practical MCNP for the Health Physicist, Medical Physicist, and Rad Engineer

DATES: **June 6 -10, 2005**   (4.5 days)
FEE: $1,450 per person
PLACE: The MESA Complex, Room 130, University of New Mexico-Los Alamos Campus

Monte Carlo calculations are ideally suited to solving a variety of problems in radiation protection and dosimetry. This course is aimed at the health physicist, medical physicist, and rad engineer with no prior experience with Monte Carlo techniques. The focus is almost entirely on the application of MCNP™ to solve a variety of practical problems in radiation shielding and dosimetry. The intent is to "jump start" the student toward using MCNP productively. Extensive interactive practice sessions are conducted on personal computers. Topics will include an overview of the MCNP code and the Monte Carlo method, input file preparation, geometry, source definition, standard MCNP tallies, interpretation of the output file, exposure and dose rate calculations, radiation shielding, photon skyshine, detector simulation and dosimetry. Students will be provided with a comprehensive class manual and a diskette containing all of the practice problems. This course has been granted 32 Continuing Education Credits by the AAHP, and 4.5 CM points by the American Board of Industrial Hygiene.

The course is offered by the Health Physics Measurements Group at the Los Alamos National Laboratory and is co-sponsored by RSICC.

Registration is available online at: **http://drambuie.lanl.gov/~esh4/mcnp.htm**. Make checks payable to the University of California (checks must be in U.S. dollars on a U.S. bank) and mail together with name, address, and phone number to: Los Alamos National Laboratory, Group HSR-4, MCNP Class, David Seagraves, Mail Stop J573, Los Alamos, NM 87545.

Inquiries regarding registration and class space availability should be made to David Seagraves, 505-667-4959, fax: 505-665-7686, e-mail: **dseagraves@lanl.gov**. Technical questions may be directed to Dick Olsher, 505-667-3364; e-mail: **dick@lanl.gov**.

Please note that this course is separate from and independent of the courses being offered by the MCNP and MCNPX Teams at LANL.

Nuclear Applications of Accelerator Technology "AccApp05"

The forthcoming International Topical Meeting on Nuclear Applications of Accelerator Technology (AccApp'05) is the seventh in a series of international meetings of the Accelerator Applications Division of the ANS. It is scheduled for **August 28-September 1, 2005,** on the Island of San Servolo, Venice, Italy. The purpose of AccApp'05 is to provide an international forum for presenting and discussing the use of particle accelerator technology for a variety of applications. It is intended to focus on a wide area of applications including, spallation neutron sources, isotope production, medical therapy, nuclear waste transmutation, energy production, high power accelerators under construction and future projects, material issues in a particle environment,
nuclear data and experiments, codes and models for particle transport, system engineering, thermo hydraulics, contraband detection and radiation protection. For more information see:
http://www.nea.fr/listsmh/satif/pdf00004.pdf.

Eleventh International Topical Meeting on Nuclear Reactor Thermal Hydraulics

NURETH is the foremost international technical meeting on nuclear technology thermal hydraulics. The NURETH-11 meeting will be held in the historic Palace of the Popes in Avignon, France, **October 2-6, 2005**. For more information please go to **http://nureth11.com/**.

Reactor Dosimetry - 12th International Symposium

Approximately every three years the ASTM International Committee E10 on Nuclear Technology and Applications and the European Working Group on Reactor Dosimetry organize a symposium on reactor dosimetry. The 12th International Symposium on Reactor Dosimetry will be held in Gatlinburg, Tennessee, **May 8-13, 2005**. This symposium will be of interest to anyone involved in reactor dosimetry, including researchers, manufacturers and representatives from industry, utilities and regulatory agencies. The symposium theme is dosimetry for the assessment of irradiated reactor materials and reactor experiments, featuring radiation metrology techniques, data bases and standardization. Additional information on paper submittal and specific focus topics can be obtained by visiting the Symposium's web site **http://www.reactordosimetry.com**. In addition to the 100 to 120 oral and poster papers on the topics given on the web site, the symposium will feature six informal round-table workshops and two introductory level tutorials. The workshops will focus on discussions of problems, conflicts, recommendations, news and ideas. The workshop titles for the 12th Symposium will be: Accelerators and Fusion, Adjustments Methods and Uncertainties, Cross Section Files and Uncertainties, LWR Surveillance Dosimetry, Radiation Damage Correlations, and Test and Research Facilities. The two introductory level tutorials will be held in parallel and will address the topics of "Radiation Effects in Reactor Materials" and "Neutron Scattering Applications in Material Science." This symposium is a must-attend meeting for those serious about the field of radiation dosimetry and will offer the opportunity for sharing ideas and discussions with colleagues in the field of radiation dosimetry. This meeting will also be ideal for those new to the field who want to be up to date on dosimetry related issues.

CALENDAR

saverio.altieri@pv.infn.it, url **http://www.pv.infn.it/~npdc19**).

International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear Biological Applications (M&C 2005), Sept. 12-15, 2005, Avignon, France. Contact: Dr. Richard Sanchez (email **avignon2005@drnsac.cea.fr**; url **http://mcavignon2005.cea.fr**).

MCNPX Intermediate Workshop, Sept. 19-23, 2005, Boston, MA, or Washington, D.C. Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

2005 NCSD Topical Meeting, Sept. 19-22, 2005, Knoxville, TN. For more information: **http://meetingsandconferences.com/ncsd2005/**.

October 2005

Eleventh International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Oct. 2-6, 2005, Avignon, France. For more information: **http://nureth11.com**, **nureth11@cea.fr**.

November 2005

MCNPX Introductory Workshop, Nov. 7-11, 2005, Santa Fe, CA. Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).