Radiation Safety Information Computational Center

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"Remember, every time you open your mouth to talk, your mind walks out and parades up and down the words." -- Edwin H. Stuart

RSICC's Website Has Been Updated

After several months of effort and testing, RSICC graduate student, Ranjit Subramani has completed a long awaited and anticipated upgrade to the RSICC website. See **http://www-rsicc.ornl.gov/rsicc.html**. We are still trying to track down bad links, etc. If you encounter problems please contact **arwoodjw@ornl.gov**. Your comments are welcome.

Changes to the Computer Code and Data Collection

Two new packages and two corrections were added to the computer code collection this month. One was a foreign contribution.

CCC-629/SESOIL

OP SYS: Windows
Language: Fortran 77
Computers: PC
Format: Windows

Oak Ridge National Laboratory, Oak Ridge, Tennessee, and Wisconsin Department of Natural Resources, Madison, Wisconsin, developed this integrated screening-level, soil compartment model designed to simultaneously model water transport, sediment transport, and pollutant fate. The package was updated with a minor correction to the source, and the executable was recreated with a newer compiler. SESOIL is a one-dimensional vertical transport model for the unsaturated soil zone. Only one compound at a time can be considered. The model is based on mass balance and equilibrium partitioning of the chemical between different phases (dissolved, sorbed, vapor, and pure). The SESOIL model was designed to perform long-term simulations of chemical transport and transformations in the soil and uses theoretically derived equations to represent water transport, sediment transport on the land surface, pollutant transformation, and migration of the pollutant to the atmosphere and groundwater. Climatic data, compartment geometry, and soil and chemical property data are the major components used in the equations.

SESOIL runs on IBM PC or compatible. The package includes a PC executable created on a Pentium 4 under Windows 2000 with the Compaq Visual Fortran Version 6.6 Update A compiler using default compiler options. The package is transmitted on CD in a self-extracting, compressed Windows file, which contains documentation, source code, sample input and output data, and a Windows executable. Reference: PUBL-SW-200-93 (Revision 1.6) (August 1994). Fortran 77; IBM PC and compatibles. (C00629IBMPC03).

CCC-710/MCNP5

OP SYS: Unix, Linux, Windows, OSX
Language: Fortran 90 & C
Computers: Workstations, PC, Mac
Format: tar

Los Alamos National Laboratory, Los Alamos, New Mexico, contributed corrections for this general-purpose, Monte Carlo, N–Particle code system that can be used for neutron, photon, electron, or coupled neutron/photon/electron transport. The package was updated with document revisions, a patch file, the corrected source and new executables for Windows, Linux, and MAC OSX. The corrections fix the two major issues noted below and some installation issues.

1. Fixed error in surface area calculation that affects some surface area calculations and therefore affects surface tallies.
2. Fixed access violation error when using FIR5 tally with a F4 tally.

Appendix G of the MCNP5 report was revised to correct the mis-labeling of the fission product ZAID's for 235U, 239Pu, and others based on data from Lawrence Livermore National Laboratory (LLNL). The changes affect the neutron cross section Table G.2 pages G-21 through G-25.

The distribution masters were updated for RSICC package ID C00710MNYCP01. Users who received the initial MCNP5 release may download the patch and revised Appendix G pages from the RSICC announcement page or the developers' website:
http://www-rsicc.ornl.gov/rsiccnew/announcements.htm

Patch & LA-UR-03-810: **http://www-xdiv.lanl.gov/x5/MCNP/theresources.html**

Table G.2 **http://www-xdiv.lanl.gov/PROJECTS/DATA/nuclear/pdf/table_g2.pdf**

If you received the initial MCNP5 release and want the new executables, request them via email to **pdc@ornl.gov**. We will send you all the updates (new executables, patch file, and the revised MCNP5 Volume 1 report) on a CD. You must include the complete mailing address to which you want the CD mailed. The updates are distributed in a 10MB Winzip file. If you prefer to receive the updates by email, note that in your email message.

The MCNP5 code package includes MCNP5DATA cross section data libraries and the Visual Editor (VISED). The Windows-based PC version of VISED can be used for interactively constructing & visualizing MCNP geometry. The package is distributed on two 80-min., 700MB CDs. One CD contains GNU compressed Unix tar files that can be read on Unix, Linux or MAC OSX. The other CD is for Windows users and installs the code and libraries in the same step-by-step automated fashion common to many Windows programs using InstallShield. Included are electronic reports, source codes, Linux, PC and MAC executables, data libraries, test problems, and installation scripts. References: LA-UR-03-1987 (May 2003), LA-UR-03-8102 (October 2003), LA-CP-03-0245 (May 2003), LA-CP-03-0284 (May 2003), informal report on VISED (2002). Fortran 90 and C; Unix systems, Windows PCs, Linux systems, Macintosh with MacOSX, Itanium (C00710MNYCP01).

CCC-720/INDOSE V2.1.1

OP SYS: Linux & Windows
Language: Fortran 90
Computers: PC
Format: tar & WinZIP

Soreq-Nuclear Research Center, Yavne, Israel, through the OECD NEA Data Bank, Issy-les-Moulineaux, France, contributed this internal dosimetry code system to calculate dose estimations using biokinetic models (presented in ICRP-56 to ICRP-71) as well as older ones. InDose uses the ICRP-66 respiratory tract model and the ICRP-30 gastrointestinal tract model as well as the new and old biokinetic models. It employs the "LSODES" algorithm to solve the set of stiff differential equations that describe the models mathematically. This is a well known algorithm for differential equations that can deal with very stiff problems and accurately account for both the fast and slow processes. The user can change any parameters of any one of the models without recompiling the code. All parameters are given in well annotated parameters files that the user may change. These files default to the values listed in ICRP publications.

InDose runs only on personal computers. The Fortran 90 source is **not** included in this package. The included executables run under Windows or Linux. On Microsoft Windows machines, InDose was compiled by the author using Digital Fortran 5. RSICC tested the distributed executables on the following systems:

- AMD Athlon running RedHat Linux 7
- Pentium 4 running Windows 2000, Service Pack 3
- Pentium running WindowsXP.

The package is transmitted on a CD which contains the executables, test cases, and data files in a GNU compressed tar file and in a self-extracting Windows file. **No source** files are included. Reference: SNRC 2979 (December 1999). Fortran 90; Personal Computer - Windows or Linux (C00720PC58600).

PSR-472/COBRA-SFS, Cycle 3

OP SYS: Unix & Windows
Language: Fortran 77
Computers: Workstations & PCs
Format: Unix & Windows

Pacific Northwest Laboratory, Richland, Washington, through the OECD NEA Data Bank, Issy-les-Moulineaux, France, contributed COBRA-SFS (Spent Fuel Storage), a code for thermal-hydraulic analysis of multi-assembly spent fuel storage and transportation systems. The code uses a lumped parameter finite difference approach to predict flow and temperature distributions in spent fuel storage systems and fuel assemblies under forced and natural convection heat transfer conditions. Derived from the COBRA family of codes, which were extensively evaluated against in-pile and out-of-pile data, COBRA-SFS retains all the important features of the COBRA codes for single phase fluid analysis, and extends the range application to include problems with two-dimensional radiative and three-dimensional conductive heat transfer. COBRA-SFS has been used to analyze various single- and multi-assembly spent fuel storage systems containing unconsolidated and consolidated fuel rods with a variety of fill media, including air, helium and vacuum.

The source files are included in this package; however, no executables are included. A Fortran 77 compiler is required on all computers. Hewlett-Packard and SGI require one subroutine in C, for the elapsed time calculation. COBRA-SFS has run on SGI R8000/R10000, IBM/ps2, INTELx86, IBM/unix, Sun SPARCstation, DEC stations, Cray with COS operating system, Cray with UNICOS system, HP-9000 workstation, and APPLE MAC-II/MPW workstation. Operating systems include: SGI IRIX 6.X, Sun OS, IBM aix, DEC VMS, Cray UNICOS, INTEL with Microsoft Windows(TM) /NT/95,

Hewlett-Packard HP-UX 9.05, and MacIntosh OS 7.0. INTEL PCs need something equivalent to Microsoft's Power Fortran. COBRA-SFS Cycle3 was tested at RSICC on a Sun UltraSparc60 running SunOS 5.6 using f77 5.0, on a DEC 500 Alpha running Digital unix version 4.0D with f77 5.1-8, and on a Pentium II running Windows 95b with Digital Visual Fortran Compiler Version 6.0A. The package is transmitted as a Unix tar file and a self-extracting DOS file on a CD. The distribution files contain source files, an information file, test case input and output. Reference: PNL-10782 (UC-800) (September 1995). Fortran 77 and C; SGI R8000/R10000, IBM/ps2, INTELx86, IBM/unix, SUN, DEC stations, Cray, HP-9000, APPLE MAC-II/MPW workstation. (P00472MNYCP00).

Monthly Code Focus

As years have gone by many different codes and applications have been sent to RSICC for stewardship. We currently have over 1700 analytical code and data packages and distribute as many each year to 73 countries in the world. To help 'categorize' each package, we have developed a database of 'Subject Categories' to attach applications to the packages at RSICC. Doing so requires investigation into each code package, user feedback from end use statements, and extensive RSICC staff experience and analysis so that we can deliver useful information each month on the 30 different categories we have identified thus far. Links to the package abstracts are embedded into the WWW version of the RSICC Newsletter. Feedback from our Newsletter community is very valuable so please direct your comments and/or suggestions to **PDC@ORNL.GOV**. Many packages in the RSICC code collection are in this subject category. A few are highlighted here for your review. December's code focus is **Fuel Cycle & Waste Management**.

ALPHN	**ORIGEN-JENDL32**	**RESRAD 5.82**
CANDULIB-AECL	**ORIGEN-ARP**	**RODBURN-FEMAXI-V**
COBRA-SFS	**ORIGEN 2.2**	**SRAC95**
FRANCO	**PAGAN**	**SWAT**
MCRAC	**PSU-LEOPARD/RBI**	**TRIGLAV**
MONTEBURNS 2.0	**REBUS-PC 1.4**	**VENTURE-PC**
NCSP-DAT	**REBUS3/VARIANT8**	**VSOP94**

CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users/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 Submission Date
7th International Conference on Facility Operations - Safeguards Interface	Feb. 29-Mar. 4, 2004 Charleston, South Carolina	**http://ntr.ornl.gov/ANS2004**	passed
40th Annual Meeting of the National Council on Radiation Protection and Measurements	Apr. 14-15, 2004 Arlington, Virginia	**http://www.ncrp.com**	na
PHYSOR 2004	Apr. 25-29, 2004 Chicago, Illinois	**www.physor2004.anl.gov**	passed
Current Topics in Monte Carlo Treatment Planning	May 3-5, 2004 Montreal, Canada	**http://mctp.medphys.mcgill.ca**	Dec. 1, 2003
International Conference on Radiation Shielding (ICRS-10) and Topical Mtg. on Radiation Protection & Shielding (RPS 2004)	May 9-14, 2004 Funchal, Madeira Island (Portugal)	**http://www.itn.mces.pt/ICRS-RPS/**	
5th International Conference on Nuclear Option in Countries with Small and Medium Electricity Grids	May 16-20, 2004 Dubrovnik, Croatia	**http://hnd.zvne.fer.hr/Dubrovnik2004**	
1st International Symposium on Radionuclide Therapy and Radiopharmeceutical Dosimetry	Sept. 4-8, 2004 Helsinki, Finland	**http://www.eanm.org/eanm.php?kopf=head/hd_calendar.html&worte=calendar/calendar.php**	future
12th International Conference on the Physics of Highly Charged Ions	Sept. 6-10, 2004 Vilnius, Lithuania	**http://www.itpa.lt/hci2004/**	Apr. 15, 2004
International Conference on Nuclear Data for Science and Technology "ND2004"	Sept. 26-Oct. 1, 2004 Santa Fe, New Mexico	**http://t16web.lanl.gov/nd2004/**	abst: 12/15/03 paper: 9/26/04

Name of Conference	Date and Location	Web Site	Abstract/Paper Submission Date
11th International Congress on Neutron Capture Therapy (ISNCT-11)	Oct. 11-15, 2004 Boston, Massachusetts	future site	

Current Topics in Monte Carlo Treatment Planning

This workshop will be held at McGill University, Montreal, Canada, from **May 3-5, 2004**, and aims to bring together medical physicists and researchers to discuss development, clinical implementation and clinical evaluation of Monte Carlo treatment planning techniques in radiotherapy. The meeting will have both invited speakers and proffered contributions and is designed to have plenty of opportunity for informal and in-depth discussions.

The details regarding registration, program, invited speakers, abstract submission, etc, please consult our workshop website: **http://mctp.medphys.mcgill.ca**. Early registration is encouraged as the number of participants will be limited to around 100.

1st International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry

The 1st International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry will take place in conjunction with the annual European Association of Nuclear Medicine (EANM) congress in Helsinki, Finland, **September 4-8, 2004.**

The format of the meeting has evolved from a series of seven interesting and important radiopharmaceutical and dosimetry symposia held approximately every 5 years since 1970, with distribution of published proceedings. The last meeting ("7th International Radiopharmaceutical Dosimetry Symposium") was held in Nashville, TN, USA in 2002.

As a separate track within the EANM congress this symposium will aim to bring together all disciplines concerned with radiopharmaceutical dosimetry and radionuclide therapy stimulating interdisciplinary scientific discussion.

The decisions of the scientific committee and the set-up of the program for Helsinki will be coordinated by the EANM Task Group on Dosimetry and EANM Therapy Committee. All organisational matters will be handled by the EANM.

A call for abstracts (also electronic) will go out in a few months, with authors notified of outcome in approximately May 2004. Contributors will be asked either to bring an electronic version of their manuscript to the meeting in September 2004 or to submit it within two months after the meeting; early plans are to have extended peer-reviewed abstracts published as a supplement to a journal.

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Val Lewington
Chair Therapy Committee EANM
vjlewington@hotmail.com

http://www.eanm.org/eanm.php?kopf=head/hd_calendar.html&worte=calendar/calendar.php

5th International Conference on Nuclear Option in Countries with Small and Medium Electricity Grids

The 5th International Conference on Nuclear Option in Countries with Small and Medium Electricity Grids will be held in Dubrovnik, Croatia, **May 16-20, 2004.**

In view of the good response and success of the previous Dubrovnik conferences devoted to the needs and interests of countries with small or medium nuclear systems and electricity grids, the Dubrovnik 2004 conference will serve the same general purpose, with concentration on the topics which invited most interest in the previous conference. The Conference will consider the nuclear option from the point of view of resources, costs, technological, organizational and educational requirements, and environmental advantages. It will also focus on matters related to operational safety, fuel cycle, waste management and decommissioning.

The important goal of the Dubrovnik 2004 conference is to serve as a forum to promote regional co-operation and exchange of experience in the use of nuclear power and fuel cycle facilities among the small or medium European countries interested in the nuclear option.

For updated information please visit the Conference website **http://hnd.zvne.fer.hr/ Dubrovnik2004**, or contact the Conference secretariat at **hnd2004@fer.hr**.

7th International Conference on Facility Operations - Safeguards Interface

This conference will be held **February 29-March 4, 2004**, in Charleston, South Carolina, at the historic Francis Marion hotel. This conference is sponsored by the American Nuclear Society and cosponsored by the Institute of Nuclear Materials Management, and is being held to foster a better understanding of the relationships of operations in nuclear facilities and the application of safeguards under national and international regimes. Papers are solicited and will be accepted based on a review of submitted abstracts by the Technical Program Committee. Draft full papers for the proceedings are due at the beginning of the conference. If you have questions regarding the abstracts, please contact Linda Rose at **roselj@ornl.gov**. For information regarding pre-registration, lodging, or abstracts, visit our web site at **http://ntr.ornl.gov/ANS2004**. Individuals with a professional interest in safeguards technology and nuclear material facility operations are invited to participate.

12th International Conference on the Physics of Highly Charged Ions

HCI-2004 will be the 12th conference in an international series taking place every two years around the world. This years will be in Vilnius, Lithuania, **September 6-10, 2004.** Born in Stockholm in 1982, HCI became a major forum for the presentation and discussion of important new research results in the physics of the Highly Charged Ions. The conference will continue to emphasize basic, fundamental science at the atomic and molecular level, and its applications to important technology challenges. The opportunity will be given to provide insights in other disciplines where HCI-physics have strong impact like Nuclear Physics, Material Science, Radiation Chemistry, Radiobiology, etc.

Some important dates are: Second Announcement and call for papers January 2004; deadline for abstracts April 15, 2004; deadline for grant applications April 15, 2004; student housing reservation May 15, 2004; early registration deadline May 15, 2004. For more information, please email **hci2004@itpa.lt** or see the website: **http://www.itpa.lt/hci2004/**.

International Conference on Nuclear Data for Science and Technology "ND2004"

The International Conference on Nuclear Data for Science and Technology will be held **September 26-October 1, 2004** in Santa Fe, New Mexico. This is an OECD-Nuclear Energy Agency Conference, which is held approximately every 3 years. Recent conferences in this series were in Antwerp (1982), Santa Fe (1985), Mito (1988), Jüelich (1991), Gatlinburg (1994), Trieste (1997) and Tsukuba (2001). This International Conference focuses on nuclear data, their production, dissemination, testing and application. The data are produced through both experiment and theoretical models; they are compiled and evaluated to form data libraries for use in applications; and they are tested through benchmark experiments and a very wide range of applications. This Conference includes all of these activities with the goal of improving nuclear data for applications including fission and fusion energy, accelerator driven systems, accelerator technology, spallation neutron sources, nuclear medicine, environment, space, non-proliferation, nuclear safety, astrophysics and cosmology, and basic research. Please see the web site for more information: **http://t16web.lanl.gov/nd2004/**.

International Conference on Radiation Shielding (ICRS-10) and Topical Meeting on Radiation Protection & Shielding (RPS 2004)

The Tenth International Conference on Radiation Shielding (ICRS-10) and the Thirteenth Topical Meeting of the Radiation Protection and Shielding Division of the American Nuclear Society (RPS 2004) will be held **May 9-14, 2004** in Funchal, Madeira Island (Portugal).

The local organization has been assigned to ITN (the Nuclear and Technological Institute, in Lisbon), a laboratory of the Portuguese Ministry of Science and Higher Education. At the international level, the joint organization is co-sponsored by the Nuclear Energy Agency (NEA) of the Organization for Economic Co-operation and Development (OECD), the Radiation Protection and Shielding Division (RPSD) of the American Nuclear Society (ANS), and the Radiation Safety Information Computational Center (RSICC, Oak Ridge National Laboratory).

It is anticipated that this will be the most important event in the areas of Radiation Shielding and Radiation Protection during 2004. For further information please refer to the Conference website at the following URL **http://www.itn.mces.pt/ICRS-RPS**. Please don't hesitate to contact the Conference Secretariat at **icrs-rps@itn.mces.pt**.

In addition, if you would be interested in serving on the Scientific Program Committee, and contribute to the success of the meeting by either submitting or encouraging colleagues to submit papers, and participating in the technical review process, please contact the Conference Secretariat at the above email and provide your name, organization, email and topics of interest or expertise. The Organizing Committee welcomes your comments and suggestions to make your meeting a success.

ICCR 2004

The ICCR 2004 meeting will be held **May 10-13, 2004**, in Seoul, Korea. The paper submission is available from now to December 15, 2003. This paper submission should be only through the web-site at **http://www.iccr.info**. Please visit the web-site and send your paper for the conference.

Your active participation and contribution will make this conference successful. Additional information is available from the ICCR 2004 conference secretariat at Hanjin Travel Service Co., Ltd. (tel : +82-2-726-5554; fax +82-2-778-2514; email **jssong@hanjinpco.com**).

MCNP Courses

Registration: **http://www-xdiv.lanl.gov/x5/MCNP/registration.html**
MCNP home page: http://www-xdiv.lanl.gov/x5/MCNP/index.html
LANL contact: **selcow@lanl.gov**
European contact: **sartori@nea.fr**

2004

Feb. TBA	Introductory	Los Alamos, NM
Apr. 19-23	Intermediate/Advanced	Tokyo, Japan
June TBA	Introductory	Los Alamos, NM

Introductory classes are for people who have little or no experience with MCNP. This class surveys the features of MCNP so the beginning user will be introduced to the capabilities of the program, and will have hands-on experience at running the code to solve simple problems. Course topics include Basic Geometry, Source Definitions, Output (Tallies) Specification and Interpretation, Advanced Geometry (repeated structures specification), Variance Reduction Techniques, Statistical Analysis, Criticality, Plotting of Geometry, Tallies, and Particle Tracks, and Neutron/Photon/Electron Physics.

The intermediate to advanced class will be held for people who have used MCNP and want to extend their knowledge and understanding of the code system.

The class will be based on MCNP5 and will cover the new capabilities of version 5. Attendees may elect to receive the new package. If you have previously received an older registered version of MCNP from RSICC, you may request that the MCNP5 package be sent to you at no charge. If you have not received an older version of MCNP from RSICC, you will be charged the applicable transmittal fee.

The other capabilities of MCNP will also be covered, including basic and advanced geometry, source definitions, tallies, data, variance reduction, statistical analysis, criticality, plotting of geometry, and particle tracks, neutron/photon/electron physics.

All classes provide interactive computer instruction. Time will be available to discuss individual questions and problems with MCNP experts or to pursue in more detail topics mentioned in the talks. Please note that other classes are offered based on MCNP. The classes mentioned here are the only ones that are taught by the people who develop and write MCNP.

MCNP Visual Editor Classes

The Visual Editor is a powerful visualization tool that can be used to rapidly create complex Monte Carlo N Particle (MCNP5) geometry models, including lattices, universes, fills, and other geometrical transformations. The Visual Editor can:

Display MCNP5 geometries in multiple plot windows,
Create surfaces and cells to build a geometry,
Create materials using the local xsdir file,
Store commonly used materials in a material library,
Sub-divide large cells into smaller cells,
Create cells containing universes and lattices,
Interactively set cell importances from the plot window, and
Display source points and collision points in the plot window.

Training class is scheduled **March 15-19, 2004,** in Richland, Washington. The class will focus

on the use of the visual editor, with an overview of MCNP. The fifth day is optional and will focus on using the Visual Editor and MCNP to do some example problems.

The class combines teaching on MCNP physics, along with instructions on how to use the Visual Editor. Computer demonstrations and exercises will focus on creating and interrogating input files with the Visual Editor. Demonstrations of advanced visualization work using MCNP will also be made. The class will be taught on Pentium computers running Windows 2000. Attendees are encouraged to bring their own input files for viewing and modifying in the visual editor. For a more detailed description of this course, **click here**. Further information on this class can be located at: **http://www.mcnpvised.com/train.html**, or by contacting Randy Schwarz (email **randyschwarz@mcnpvised.com**).

MCNPX Workshops

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

2004

January 12-16	Introductory	Las Vegas, NV
March 8-12	Intermediate	Santa Fe, NM
May 3-7	Intermediate	Lisbon, Portugal
June 14-18	Intermediate	Houston, TX
July 12-16	Introductory	Santa Fe, NM

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.

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**.

PHYSOR 2004

The Chicago Section of the American Nuclear Society is pleased to announce that it will host the PHYSOR-2004 Topical Meeting, **April 25-29, 2004,** in Chicago, Illinois. The meeting is co-sponsored by the Reactor Physics Division of the ANS, OECD Nuclear Energy Agency, European Nuclear Society, Canadian Nuclear Society, and the Brazilian National Atomic Energy Commission. The conference will be held at the Hyatt Regency in downtown Chicago.

The title for the meeting is "The Physics of Fuel Cycles and Advanced Nuclear Systems: Global Developments." The technical program will cover more than 15 topical focus areas. You are invited to visit the meeting website at **www.physor2004.anl.gov** to obtain updated information and to download a copy of the meeting announcement. Contact: Ray Klann, Technical Program Co-Chair, at 630-252-4305 or **klann@anl.gov**.

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

DATES: June 7-11, 2004
FEE: $1,450 per person
PLACE: The MESA Complex, Room 130, University of New Mexico-Los Alamos Campus

Monte Carlo type 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 a personal computer. 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 also 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.

Short Course on "Introduction to Monte Carlo Treatment Planning"

Course Director: Charlie Ma, Ph.D. ; Course Coordinator: Jinsheng Li, Ph.D.
Contact information: Tel 215-728-5665, Fax: 215-728-4789; Email: **js_li@fccc.edu**
Webpage: **http://www.fccc.edu/clinical/radiation_oncology/monte_carlo_course.html**
Venue: Radiation Oncology, FCCC, Philadelphia, PA
Time: **April 8-10, 2004**

The course registration fee is $1600, which covers the course materials, two lunches, two dinners and refreshments. A set of software is free for the attendee. Discounts for students are available. Hotel information is available upon request.

The short course is designed to train future Monte Carlo RTP users and researchers in the use of Monte Carlo treatment planning software. The course will include didactic instruction and hands-on workshops. The course is specially suited for previous EGS4 and OMEGA/BEAM course participants, who want to expand their research into clinical RTP. A working knowledge of a Unix-based system is expected to run the Monte Carlo RTP software.

Enrollment will be limited to 20 people to facilitate instruction at the hands-on labs. So please register early. Registration will be strictly on a first-come basis. Please contact Dr. Jinsheng Li, at **js_li@fccc.edu** or see the website: **http://www.fccc.edu/clinical/radiation_oncology/monte_carlo_course.html**.

CALENDAR

January 2004

MCNPX Introductory Workshop, Jan.12-16, 2004, Las Vegas, NV. Contact: Bill Hamilton (tel 505-455-0312, Email **registrar@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

March 2004

MCNPX Intermediate Workshop, Mar. 8-12, 2004, Santa Fe, NM. Contact: Bill Hamilton (tel 505-455-0312, email **registrar@mcnpxworkshops. com,** url **http://mcnpxworkshops.com**).

Visual Editor for MCNP, Mar.15-19, 2004, Richland, Washington. Contact: Randy Schwarz (email **randyschwarz@ mcnpvised.com**, url **http://www.mcnpvised.com/train.html**).

April 2004

PHYSOR 2004 Reactor Physics Topical Meeting, Apr. 25-29, 2004, Chicago, IL. Jointly sponsored by the Reactor Physics Division of the ANS and the Nuclear Energy Agency of the OECD and others. **Contact:** Ray Klann (tel 630-252-4305, email **klann@anl.gov,** url **http://www.physor2004.anl.gov/**).

May 2004

Current Topics in Monte Carlo Treatment Planning, May 3-5, 2004, McGill University, Montreal, Canada. Contacts: Jan Seutjens and Frank Verhaegen (tel 514-934-8052, url **http://mctp.medphys.mcgill.ca**).

MCNPX Intermediate Workshop, May 3-7, 2004, Lisbon, Portugal Contact: Bill Hamilton (tel 505-455-0312, Email **registrar@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

International Conference on Radiation Shielding (ICRS-10) and Topical Mtg. on Radiation Protection & Shielding (RPS 2004), May 9-14, 2004, Funchal, Madeira Island (Portugal). Contact: Conference Secretariat (email **icrs-rps@itn.mces.pt,** url **http://www.itn.mces.pt/ICRS-RPS**).

5th Intl. Conference on Nuclear Option in Countries with Small and Medium Electricity Grids, May 16-20, 2004., Dubrovnik, Croatia, Contact Prof. Nenad Debrecin (tel +385-1-6312-399, email **hnd2004@fer.hr**, url **http://hnd.zvne.fer.hr/Dubrovnik2004**).

June 2004

Practical MCNP for the HP, Medical Physicist, and Rad Engineer, June 7-11, 2004, Univ. of New Mexico, Los Alamos Campus. Contact: David Seagraves, (tel 505-667-4959, fax 505-665-7686, e-mail **dseagraves@lanl.gov**. Technical questions may also be directed to Dick Olsher, 505-667-3364; e-mail **dick@lanl.gov**, url **http://drambuie.lanl.gov/~esh4/mcnp.htm**).

MCNPX Intermediate Workshop, June 14-18, 2004, Houston, TX. Contact: Bill Hamilton (tel 505-455-0312, Email **registrar@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

July 2004

MCNPX Introductory Workshop, July 12-16, 2004, Santa Fe, NM. Contact: Bill Hamilton (tel 505-455-0312, Email **registrar@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

September 2004

1st International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry, Sept. 4-8, 2004, Helsinki, Finland. Contact: Michael Lassmann or Val Lewington , (emails **lassmann@ nuklearmedizin.uni-wuerzburg.de**; **vjlewington@ hotmail.com**).

International Conference on Nuclear Data for Science and Technology "ND2004", Sept. 26-Oct. 1, 2004, Santa Fe, New Mexico. (Contact: **http://t16web.lanl.gov/nd2004/**).