Radiation Safety Information Computational Center

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"Many a man never fails because he never tries." -- Norman MacEwan

Visitors to RSICC

RSICC had three visitors from BNFL Instrument Inc. February 2, 2004. **David Heath**, General Manager, Santa Fe, New Mexico; **Ralph Brittelli, Jr.**, Manager of Eastern Operations - Atlanta Office, and **Jack Frye**, Eastern Region Sales Representative, Oak Ridge, Tennessee. Discussions included their operations and business with detectors. RSICC discussed our operations and our software within the nuclear instrumentation areas.

Obituary

Environmental engineering professor **Dr. W. Emmett Bolch**, passed away at the end of December. He was an expert in radiological techniques, environmental monitoring, radiation protection and radon. Prof. Bolch received his Ph.D. in health physics at the University of California, Berkeley. After coming to the University of Florida in 1966, he taught countless students and supervised numerous graduate students over his 37-year career. He directed a variety of research programs in radiological health, including a 20-year contract with Florida Power Corporation for environmental surveillance of the Crystal River nuclear plant. Prof. Bolch was the recipient of three Teacher-of-the-Year awards at UF and was named a fellow of the National Health Physics Society in 2002. By request, contributions should be made to the Hospice House of Gainesville, 4200 NW 90th Boulevard, Gainesville, FL. 32606.

(taken from the *Nuclear & Radiological Review*, Winter 2004).

Changes to the Computer Code and Data Collection

Two new and three newly frozen packages were added to the computer code and data collection this month. Three were foreign contributions.

CCC-644/HOTSPOT 2.05

OP SYS: Windows
Language: Basic
Computers: PC
Format: Windows

Lawrence Livermore National Laboratory, Livermore, California, contributed a newly frozen version of this code system for evaluating accidents involving radioactive materials. The HOTSPOT 2.05 codes were created to provide Health Physics personnel with a fast, field-portable calculational tool for evaluating accidents involving radioactive materials. HOTSPOT codes are a first-order approximation of the radiation effects associated with the atmospheric release of radioactive materials.

Four general programs, PLUME, EXPLOSION, FIRE, and RESUSPENSION, calculate a downwind assessment following the release of radioactive material resulting from a continuous or puff release, explosive release, fuel fire, or an area contamination event. Additional programs deal specifically with the release of plutonium, uranium, and tritium to expedite an initial assessment of accidents involving nuclear weapons. The FIDLER program can calibrate radiation survey instruments for ground survey measurements and initial screening of personnel for possible plutonium uptake in the lung.

HOTSPOT is a hybrid of the well-established Gaussian Plume Model, widely used for initial emergency assessment or safety analysis planning of a radionuclide release. Virtual source terms are used to model the initial atmospheric distribution of source material following an explosion, fire, resuspension, or user-input geometry. ICRP Publication 30 Respiratory Tract and ICRP 30 Part IV Systemic models are the basis for the Dose Conversion Factors (DCF). ICRP 26/30 Tissue Weighting Factors are used for the 50-year Committed Effective Dose Equivalent DCF values. HOTSPOT incorporates Federal Guidance Reports 11, 12 and 13 (FGR-11, FGR-12, FGR-13) Dose Conversion Factors for inhalation, submersion, and ground shine.

HOTSPOT runs on personal computers under Windows and is a full 32-bit Windows 95/98/00/XP/NT Application. The included executable was created with Microsoft Visual Basic 6.0 Professional. No source files are included in the package which is transmitted on CD in a ZIP file. Reference: Hot205.HLP electronic help file (November 2003). BASIC; Pentium (C00644IBMPC03).

CCC-712/DCHAIN-SP 2001

OP SYS: Unix
Language: Fortran 77
Computers: Sun
Format: Unix tar

Japan Atomic Energy Research Institute, Tokai-mura, Ibaraki-ken, Japan, contributed an updated version of this code system for analyzing decay and build-up characteristics of spallation products. The update includes some bug fixes to the code and the addition of a new report, JAERI-Data/Code 2001-016, which is written in Japanese with some appendices written in English.

DCHAIN-SP 2001 estimates the nuclide inventories and radiation environment of high energy accelerator related facilities and was designed to resolve issues regarding spallation neutron utilization facilities. DCHAIN-SP2001 is an update of DCHAIN-SP. For analyzing the decay and build-up characteristics of spallation products, DCHAIN-SP was developed on the basis of CCC-370/DCHAIN2 by revising the decay data and implementing the neutron cross section data. The decay data are newly processed from the data libraries of EAF 3.1, FENDL/D-1 and ENSDF. The neutron cross section data taken from FENDL/A-2 are also prepared to take account of the transmutation of nuclides by the neutron field at the produced position. DCHAIN -SP solves the time evolution of decay and build-up of nuclides in every decay chain by the Bateman method. It can calculate the nuclide inventory, radioactivity, decay heat and gamma-ray energy spectra on the basis of the nuclide production rate calculated by the nucleon-meson transport code NMTC/JAERI97. The package is transmitted on CD as a compressed Unix tar file. The Sun SPARC Compiler Fortran 77 Ver. 4.0 was used for code development. The code was tested at RSICC on Sun Ultra-SparcStation,

Dec/Alpha 500au, IBM RS/6000 590, and on an AMD Athlon running RedHat Linux 7.3 with GNU Fortran 0.5.26. References: JAERI-Data/Code-99-008 (March 1999) and JAERI-Data/Code 2001-016 (In Japanese) (February 2001). Fortran 77, Unix system, Sun, DEC, and HPUX (C00712MNYWS01).

CCC-718/MCNP-POLIMI v1.0

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

Polytechnic of Milan, Milano, Italy, contributed this code system which is based on the Los Alamos National Laboratory code MCNP4C (formerly distributed by RSICC as CCC-700). MCNP-PoliMi was developed to simulate time-analysis quantities. In particular, the PoliMi code includes the correlation between neutron interaction and the corresponding photon production. Conversely to the technique adopted by standard MCNP, MCNP-PoliMi samples secondary photons according to the neutron collision type. A post-processing code, i.e. the Matlab script "postmain," is included and can be tailored to model specific detector characteristics. These features make MCNP-PoliMi a versatile tool to simulate particle interactions and detection processes.

MCNP-PoliMi is operable on Windows-based PCs and is transmitted in a winzip file on CD. The included executable was created with Compaq Visual Fortran Professional Edition 6.6 on a Pentium IV under Windows XP Professional. The MDAS parameter inside the code was set to 16,000,000 (16 Mwords). The plot feature is not included in the distributed executable.

Cross sections are not included in this package. The user is advised to select available ENDF-based MCNP libraries (60C), or those with the most detailed photon production description for the particular problem. DLC-200/MCNPDATA (or equivalent) is suitable for use with MCNP-PoliMi. Reference: "User's Manual," Polytechnic of Milan, Italy (November 25, 2002). Fortran 77; Intel-based PCs. (C00718PC58600).

PSR-264/ACORNS Version 2003-1 and 2003-2

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

The Institute of Nuclear Techniques, Budapest University of Technology and Economics, Budapest, Hungary, contributed a newly frozen release of this code system for analysis of correlation matrices used in neutron spectrometry. ACORNS allows the user to verify whether the covariance and correlation matrices used in activation neutron spectrometry are positive definite, that is the eigenvalues of the matrix concerned are all positive. Depending on the available data, diagonalization of the covariance/relative covariance/correlation matrices of neutron spectra/reaction rates/cross sections is performed. The input is qualified on the basis of the eigenvalues. Optionally, the program performs factor analysis to help learn the common reasons for correlations of the quantities investigated.

This release was developed and tested on personal computers and is expected to run on any computer which has a Fortran 90 compiler. Included PC executables were created with Lahey/Fujitsu Fortran 95 Release 5.60 under the Windows 95 operating system. A standard Fortran 90 compiler is required to run on other computers. The codes were tested at RSICC under Windows XP. ACORNS is distributed on a CD in a WinZIP file which includes electronic documents, source code, PC executables and sample problem. References: Budapest University of Technology and Economics (April 2003), BME-TR-RES-10/86(January 1986), and BME-TR-RES-2182 (March 1982). Fortran 90: Personal computers (P00264IBMPC01).

PSR-527SECPOP2000
Version 3.12

OP SYS: Windows
Language: Visual Basic
Computers: Pentium
Format: Windows

Sandia National Laboratories, Albuquerque, New Mexico, and the U.S. Nuclear Regulatory Commission, Washington, DC, contributed this code system for sector population, land fraction and economic estimation. SECPOP2000 calculates estimated population and economic data about any point (specified by longitude and latitude) that lies within the continental United States. The previous version, SECPOP90, (distributed by RSICC as PSR-378) supports two types of analysis: site and regional. Site analysis provides population and economic data estimates for any location within the continental United States. Calculation results can be displayed, printed, or saved as a rosette, a table, a MACCS2 (MELCOR Accident Consequence Code System) site file, or a MACCS2-like comma-separated-variable file. Regional analysis assesses compliance of available sites against siting parameters (i.e., specific population density criteria). Regional analysis is not supported in SECPOP2000 because some of the software packages originally used for regional analysis are no longer available. SECPOP2000 uses the latest (2000) census data, which provide greater resolution than 1980 and 1990 census data. This greater resolution is achieved by employing over eight million census-block data points and performing the sector population estimates directly from these points. This is an increase of approximately two million data points over the 1990 census data.

SECPOP2000 runs on Pentium or faster Intel processors under Windows 98™, NT™, 2000™, and XP™ operating systems. The included executable was compiled with Visual Basic Version 6.0 with service pack 5 including TrueDBGrid Pro 7.0. The package is transmitted on a CD which includes a setup.exe file that will install the executables, document and directories with census data, site data, and plotting data. Source files are not included. Reference: NUREG/CR-6525, Rev. 1 (August 2003). Visual Basic; Pentium (P00527PC58600).

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**. March's code focus is **Isotope Generation & Decay**.

ACTIV87
ANITA-2000
BISON-C
DCHAIN 1.3
DCHAIN2
DECDC 1.0
DEPLETOR
EASY-99
ORIGEN-ARP
ORIGEN2.2
PWR-AXBUPRO-SNL
RACC-PULSE
RADAC
REAC*3
SAND-II-SNL

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 Due Date
40th Annual Meeting of the National Council on Radiation Protection and Measurements	Apr. 14-15, 2004 Arlington, Virginia	**http://www.ncrp.com**	n/a
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**	passed
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**	
ANS Annual Summer Meeting	June 13-17, 2004 Pittsburgh, Pennsylvania	**http://www.ans.org/meetings/ students call for papers**	passed

Name of Conference	Date and Location	Web Site	Abstract/Paper Due Date
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
16th American Nuclear Society Topical Meeting on the Technology of Fusion Energy	Sept. 14-16, 2004 Madison, Wisconsin	**http://fti.neep.wisc.edu/tofe**	May 1, 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/**	passed
5th International Conference of Yugoslav Nuclear Society (YUNS)	Sept. 27-30, 2004 Belgrade, Serbia & Montenegro	**http://www.vin.bg.ac.yu/YUNS/Yunsc2004.html**	June 1, 2004
Americas Nuclear Energy Symposium 2004	Oct. 3-6, 2004 Miami Beach, FL	**http://anes.fiu.edu/2004/**	NA
11th International Congress on Neutron Capture Therapy (ISNCT-11)	Oct. 11-15, 2004 Boston, Massachusetts	future site	
ANS Annual Winter Meeting and Nuclear Technology Expo	Nov. 14-18, 2004 Washington, D.C.	**http://www.ans.org/meetings/**	
Monte Carlo 2005 Topical Meeting	Apr. 17-21, 2005 Chattanooga, Tennessee	**http://meetingsandconferences.com/MonteCarlo2005**	**call for papers**
Twelfth International Symposium on Reactor Dosimetry	May 8-13, 2005 Gatlinburg, Tennessee	**announcement / call for papers in pdf**	
ANS Annual Summer Meeting	June 5-9, 2005 San Diego, California	**http://www.ans.org/meetings/**	

2004

Americas Nuclear Energy Symposium 2004

The United States Department of Energy and the American Nuclear Society are pleased to announce the next Americas Nuclear Energy Symposium (ANES 2004), which will take place Sunday through Wednesday, **October 3- 6, 2004,** at the Deauville Beach Resort in Miami Beach, Florida.

ANES 2004 will feature the theme "Building Bridges to Greater Cooperation." The symposium will provide you with the latest information about the use and development of nuclear energy technology throughout the Americas. The format will include open panel discussions, case studies, technical breakout sessions, and an exhibit of international organizations, not to mention great opportunities to network.

ANES 2004 will include sessions on nuclear reactors; technology development and deployment; production, disposal and usage of isotopes; fuel cycle and waste management; new applications; finance; and environmental, infrastructure and communications issues.

Another successful event is anticipated with the largest number of participants yet attending from across Canada, the Caribbean, Latin America and the United States. Please visit the website at **http://anes.fiu.edu** for frequent updates.

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.

For details regarding registration, program, invited speakers, abstract submission, etc, please consult the 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, Tennessee in 2002.

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.

Michael Lassmann
Chair T/G Dosimetry EANM
Lassmann@nuklearmedizin.uni-wuerzburg.de

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**.

5th International Conference of Yugoslav Nuclear Society (YUNS) - 2004

The Conference will be held **September 27-30, 2004**, at the Chamber of Commerce of the Republic of Serbia, Belgrade, Serbia & Montenegro. For more information visit **http://www.vin.bg.ac.yu/YUNS/Yunsc2004.html**.

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: 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/**.

16th American Nuclear Society Topical Meeting on the Technology of Fusion Energy

The ANS Topical Meeting on the Technology of Fusion Energy will be held **September 14-16, 2004**, in Madison, Wisconsin. You are cordially invited to submit one-page abstract(s) describing work that is new, significant, and relevant to both magnetic and inertial fusion technologies. A Microsoft Word

template that can be used to create the abstract is available on the TOFE website: **http://fti.neep.wisc.edu/tofe**.

The 16th Topical Meeting on the Technology of Fusion Energy (TOFE) will continue the tradition of stand-alone topical meetings originated in the early 1970's, continued through the 80's, and re-established in the year 2000 in Park City, Utah. The scope of the TOFE meeting is to provide a forum for sharing the exciting new progress that has been made in fusion research as well as presenting the future of the national and worldwide fusion program.

The two and a half day program of the 16th TOFE meeting will have plenary, oral, and poster sessions, including a mix of invited oral papers and a significant number of contributed oral and poster papers. Key deadlines follow: one-page abstracts (May 1, 2004); nominations for ANS-FED awards (May 31, 2004); notification to authors (June 1, 2004); early registration deadline (August 10, 2004); hotel reservation cutoff date (August 10, 2004); full papers due at the meeting (September 14, 2004).

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. 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**, url **http://www.iccr.info**).

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**

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**

March 8-12	Intermediate	Santa Fe, NM
May 3-7	Intermediate	Lisbon, Portugal
June 7-11	Introductory	Santa Fe, NM
July (TBA)	Intermediate	Houston, TX

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.

SCALE TRAINING COURSES

The SCALE staff at Oak Ridge National Laboratory (ORNL) will be offering three training courses this spring, **April 26-30, May 3-4, and May 5-7, 2004.** The courses will emphasize hands-on experience solving practical problems on PCs. There will be workgroups of two persons each. Courses are open to both new and experienced SCALE users. Registration must be submitted by March 26, 2004. After that date a surcharge of $300 will be added to the fee.

Classes are cosponsored by RSICC which offers a discounted price of $200 (single user license) to all attendees for the SCALE software and manual on CD.

Registration forms should be submitted from the Web. Registration via fax is also acceptable. The registration fee may be paid by check, bank transfer, or credit card (VISA or MasterCard only). Course agendas and description information are found at **http://www.ornl.gov/sci/scale/trcourse.html**. Class size is limited and courses are subject to cancellation if minimum enrollment is not obtained one month prior to the course. Course fees are refundable up to one month before each class.

Foreign nationals must register at least eight weeks in advance to obtain security clearance. For further information, contact Kay Lichtenwalter, **scalecoding@ornl.gov** , 865-574-9213.

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
Date: **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**.

2005

Monte Carlo 2005 Topical Meeting

Monte Carlo 2005 will be held **April 17-21, 2005,** (Sunday-Thursday). The theme of the conference will be "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 will 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 September 10, 2004. For information contact Bernadette Kirk (**kirkbl@ornl.gov**, 865-574-6176), General Chair, or Jeff Johnson (**johnsonjo@ornl.gov**, 865-574-5262), Technical Chair.

Twelfth International Symposium on Reactor Dosimetry

The Twelfth International Symposium on Reactor Dosimetry will be held **May 8-13, 2005,** in Gatlinburg, Tennessee.

This Symposium is held approximately every three years to provide a forum for the interchange of state-of-the-art techniques, data bases and standardization of radiation metrology. The Symposium will be of value to those involved in reactor dosimetry, including researchers, manufacturers and representatives from industry, utilities and regulatory agencies.

This Symposium is jointly sponsored by ASTM International, the European Working Group on Reactor Dosimetry (EWGRD), and the Atomic Energy Society of Japan (AESJ). It is organized by ASTM Committee E10 on Nuclear Technology and Applications and EWGRD.

The Symposium will be organized into oral and poster presentations, informal round-table workshops and tutorials. The meeting language will be English. No translations will be provided.

All papers presented at the Symposium will be subject to peer-review before acceptance for publication in the on-line Journal of ASTM International. Registrants will receive a complimentary CD of the papers presented at the Symposium. For more information visit the website at: **http://reactordosimetry.com/**.

CALENDAR

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/**).

9th Workshop on Monte Carlo Simulation of Radiotherapy Treatment Sources Using the BEAM Code System, Apr. 26-29, 2004, Ottawa, Canada. Contact: Dave Rogers (tel 613-520-2600 x4374, fax 613-520-4061, email **drogers@physics.carleton.ca**, url **www.physics.carleton.ca/~drogers/BEAM/course/brochure.html**).

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 Introductory Workshop, June 7-11, 2004, Santa Fe, NM. Contact: Bill Hamilton (tel 505-455-0312, email **registrar@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

July 2004

MCNPX Intermediate Workshop, July (TBA), 2004, Houston, TX. 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**).

16th American Nuclear Society Topical Meeting on the Technology of Fusion Energy, Sept. 14-16, 2004, Madison, WI. (url **http://fti.neep.wisc.edu/tofe**).

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

5th International Conference of Yugoslav Nuclear Society (YUNS) - 2004, Sept. 27-30, 2004, Belgrade, Serbia & Montenegro. Contact: Dr. Milan Pesic, (tel 381-11-245-82-22/ext. 681, email **mpesic@vin.bg.ac.yu**, url **http://www.vin.bg.ac.yu/YUNS/index.htm**).

October 2004

11th World Congress on Neutron Capture Therapy (ISNCT-11), Oct. 11-15, 2004, Boston, MA. Contact: Robert G. Zamenhof (tel 617-636-1681, fax 617-636-5867, email **rzamenhof@tufts-nemc.org**, url **http://meetingsandconferences.com/ISNCT-11/**).

April 2005

Monte Carlo 2005 Topical Meeting, Apr. 17-21, 2005, Chattanooga, TN. Contact: Bernadette Kirk (tel 865-574-6176, fax 865-241-4046, email **kirkbl@ornl.gov**, url **http://meetingsandconference.com /MonteCarlo2005**).

ACCESSION OF NUCLEAR SYSTEMS LITERATURE

The nuclear systems literature (shielding, safety, materials) cited below has been reviewed and placed in the RSICC Information Storage and Retrieval Information System (SARIS), now searchable on the RSICC web server (**http://www-rsicc.ornl.gov/SARIS.html**). We now include medical physics in addition to material science, radiation dosimetry, radiation safety, reactor dynamics, reactor safeguards, risk assessment, waste management, fuel cycle, fusion and plasmas, high energy particle transport, and shielding. This early announcement is made as a service to the nuclear sciences community. Copies of

the literature are not distributed by RSICC. They may generally be obtained from the author or from a documentation center such as the National Technical Information Service (NTIS), Department of Commerce, Springfield, Virginia 22161.

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