
Radiation Safety Information Computational Center



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“Regret for time wasted can become a power for good in the time that remains, if we will only stop the waste and the idle, useless regretting” -- Arthur Brisbane

HAPPY NEW YEAR!

New Pricing Matrix

In case you missed the article in the November issue, RSICC is happy to notify all users of the following immediate changes in pricing policy. As of November 1, 2003, the user fee associated with each single user license was reduced. As is the current practice, each potential RSICC researcher must be registered and request software through the on-line service at

<http://www-rsicc.ornl.gov/rsiccnew/order.htm>.

Each individual software package user will be charged a user fee of \$200.00 from US, state, or local federal government agencies, US non-profit organizations, US universities, or

\$300.00 from US private industry, or

\$400.00 from non-US organizations before each software package can be sent to them.

Each user will be screened using the current export control rules and regulations by trained RSICC staff. Each user will be restricted from sharing the RSICC software with another user who hasn't registered and received the RSICC software. All questions about fees, export control restrictions, single user license rules, etc. can be relayed to Hatmakerna@ornl.gov and frequently asked questions portion of the RSICC www site is <http://www-rsicc.ornl.gov/rsiccnew/faq.htm>.

Changes to the Computer Code and Data Collection

Two new packages, one correction and one addition were added to the computer code and data collection this month. Three were foreign contributions.

CCC-627/RADAC

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

This code system for calculating radioactive decay and accumulation of decayed products using integer-array arithmetic for precise evaluation of the Bateman equations was developed in 1996 at Oak Ridge National Laboratory, Oak Ridge, Tennessee. The package has been updated with the addition of the Fortran source, which was omitted from the initial release. The Lahey F77L/EM32 compiled executable (created in 1996) for the original release will not run on WindowsXP, so the RADAC source was recompiled.

The executable included in the package was created on a Pentium IV running Windows 2000 with Compaq Visual Fortran 6.6, Update A. This package is transmitted on CD with the referenced documents in PDF format and a WinZIP file which contains Fortran source, a PC executable, information file, data files, and test case. Reference: ORNL/TM-12380 (November 1995). Fortran 77; PC (C00627PC48602).

CCC-717/NMTC-JAM

OP SYS: Linux or Windows
Language: Fortran 77
Computers: PC
Format: tar

The Center for Neutron Science, Japan Atomic Energy Research Institute, Tokai-mura, Naka-run, Japan, through the Research Organization for Information Science and Technology (RIST), contributed this high energy, particle-transport code system. NMTC/JAM is an upgraded version of the code CCC-694/NMTC-JAERI97, which was developed beginning in 1982 at JAERI and was based on the CCC-161/NMTC code system. NMTC/JAM simulates high energy nuclear reactions and nuclear meson transport processes. The applicable energy range of NMTC/JAM was extended in principle up to 200 GeV for

nucleons and mesons by introducing the high energy nuclear reaction code Jet-Aa Microscopic (JAM) for the intra-nuclear cascade part. For the evaporation and fission process, a new model, GEM, can be used to describe the light nucleus production from the excited residual nucleus. According to the extension of the applicable energy, the nucleon-nucleus non-elastic, elastic and differential elastic cross section data were upgraded. In addition, the particle transport in a magnetic field was implemented for beam transport calculations. Some new tally functions were added, and the format of input and output of data is more user friendly. These new calculation functions and utilities provide a tool to carry out reliable neutronics study of a large scale target system with complex geometry more accurately and easily than with the previous model.

NMTC-JAM runs on personal computers under Windows and SuSE Linux 7.2. The code was tested at RSICC on a Pentium IV running Windows XP and on a PC Red Hat Linux 9.0 system. The package is transmitted on CD in a GNU compressed Unix tar file, which includes documentation, source code, PC executable, data, and sample problem. Windows users may expand the package with WinZIP 8.0 or newer. Reference: JAERI-Data/Code 2001-007 (March 2001). Fortran 77; Linux or Windows Pentium (C00717PC58600).

DLC-203/mcjef22nea.bolib

OP SYS: Any
Language: N/A
Computers: PC; Workstation
Format: Windows & tar

ENEA - Centro Ricerche, Bologna, Italy, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Molineaux, France, contributed a corrected release of these data processed in ACE format for the MCNP Monte Carlo transport code with the NJOY-94.66 nuclear data processing systems. The xsdir files in the distribution were corrected, but the data were not modified.

This continuous energy cross-section data library designated MCJEF22NEA.BOLIB is based on JEF-2.2 and IRDF-90. It contains 107 isotopes/natural elements, including fission products, processed for up to eight temperatures: 300 K, 500 K, 560 K, 760 K, 800 K, 1000 K, 1500 K and 2200 K. The processed data include gamma-ray and gas production data when available in the specific JEF-2.2 evaluated data files.

Thermal scattering cross sections were processed for some of the most important moderator materials using the thermal scattering matrices S (alpha, beta) at various temperatures, included in the original JEF-2.2 thermal scattering law data file.

Nuclides include: H-1, H-2, He-4, Li-6, Li-7, Be-9, B-10, B-11, C-nat, N-14, N-15, O-16, O-17, F-19, Na-23, Mg-nat, Al-27, Si-nat, Cl-nat, Ti-nat, Cr-50, Cr-52, Cr-53, Cr-54, Mn-55, Fe-54, Fe-56, Fe-57, Fe-58, Co-59, Ni-58, Ni-60, Ni-61, Ni-62, Ni-64, Zr-90, Zr-91, Zr-92, Zr-94, Zr-96, Zr-nat, Nb-93, Mo-92, Mo-94, Mo-95, Mo-96, Mo-97, Mo-98, Mo-100, Mo-nat, Tc-99, Ru-101, Ru-102, Ru-104, Rh-103, Pd-105, Pd-107, Ag-109, I-129, Xe-131, Cs-133, Pr-141, Nd-143, Nd-145, Pm-147, Sm-147, Sm-149, Sm-150, Sm-151, Sm-152, Eu-153, Gd-154, Gd-155, Gd-156, Gd-157, Gd-158, Gd-160, Hf-174, Hf-176, Hf-177, Hf-178, Hf-179, Hf-180, Pb-nat, Bi-209, Th-232, U-234, U-235, U-236, U-238, Np-237, Pu-238, Pu-239, Pu-239bis, Pu-240, Pu-241, Pu-242, Am-241, Am-242, Am-242m, Am-243, Cm-242, Cm-243, Cm-244, Cm-245, Cm-246, Cm-247, Cm-248.

H in CH₂ (polyethylene), H in H₂O (light water), D in D₂O (heavy water), C (graphite), Be (beryllium metal)

DOSIMETRY CROSS-SECTION: 16-S-32, 48-Cd-0, 79-Au-197

The data libraries are transmitted on CD in a GNU compressed tar file and in a self-extracting, compressed Windows file which include the data libraries and xmdir files. The uncompressed ASCII files are about one GB. References: ENEA - KT-SCG-00008 (February 24, 2000) and ZZ-bolibJef22.inf (October 2001). ASCII card images; Unix workstation (D00203MNYCP01).

DLC-216/
MCB63NEA.BOLIB

OP SYS: Any
Language: N/A
Computers: PC; Workstation
Format: tar

ENEA - Centro Ricerche, Bologna, Italy, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Molineaux, France, contributed this data library processed in ACE format for the MCNP Monte Carlo transport code with the NJOY-94.66 nuclear data processing systems. This continuous energy cross-section data library designated MCB63NEA.BOLIB is based on ENDF/B-VI Release 3. It contains 107 isotopes/natural elements, including fission products, processed for up to eight temperatures: 300 K, 500 K, 560 K, 760 K, 800 K, 1000 K, 1500 K and 2200 K. The processed data include gamma-ray and gas production data when available in the specific evaluated data files.

This library provides users an additional ENDF/B-VI based, continuous-energy and multi-temperature library for MCNP with an important feature: there is a perfect consistency with the twin library MCJEFF22NEA.BOLIB in terms of nuclear data processing calculation methodology. This may be important, in particular, for the users involved in nuclear data validation who have already used the MCJEF22NEA.BOLIB library.

Nuclides include: H-1, H-2, He-4, Li-6, Li-7, Be-9, B-10, B-11, C-nat, N-14, N-15, O-16, O-17, Na-23, Mg-nat, Al-27, Si-nat, Cl-nat, Ti-nat, Cr-50, Cr-52, Cr-53, Cr-54, Mn-55, Fe-54, Fe-56, Fe-57, Fe-58, Co-59, Ni-58, Ni-60, Ni-61, Ni-62, Ni-64, Zr-90, Zr-91, Zr-92, Zr-94, Zr-96, Zr-nat, Nb-93, Mo-94, Mo-95, Mo-96, Mo-97, Mo-nat, Tc-99, Ru-101, Ru-102, Ru-104, Rh-103, Pd-105, Pd-107, Ag-109, I-129, Xe-131, Cs-133, Pr-141, Nd-143, Nd-145, Pm-147, Sm-147, Sm-149, Sm-150, Sm-151, Sm-152, Eu-153, Gd-154, Gd-155, Gd-156, Gd-157, Gd-158, Gd-160, Hf-174, Hf-176, Hf-177, Hf-178, Hf-179, Hf-180, Hf-nat, Pb-206, Pb-207, Pb-208, Bi-209, Th-232, U-233, U-234, U-235, U-236, U-238, Np-237, Pu-238,

Pu-239, Pu-240, Pu-241, Pu-242, Am-241, Am-242, Am-242m, Am-243, Cm-242, Cm-243, Cm-244, Cm-245, Cm-246, Cm-247, Cm-248.

H in CH₂ (polyethylene), H in H₂O (light water), D in D₂O (heavy water), C (graphite), Be (beryllium metal)

DOSIMETRY CROSS-SECTION: 16-S-32, 48-Cd-0, 79

The data files are transmitted on CD as a GNU compressed Unix tar file which can be expanded under Windows with WinZIP8.0 or newer. Included are data libraries and xmdir files. The uncompressed ASCII files are about 1.3 GB. References: ENEA - KT-SCG-00014 (June 2001) and ZZ-bolibB63.inf (October 2001). ASCII card images; Workstation or PC (D00216MNYCP00).

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. January's code focus is **Fusion Energy**.

[ANITA-2000](#)

[AUS-98](#)

[BERMUDA](#)

[BISON-C](#)

[EAF-99](#)

[EASY-99](#)

[FENDL-2.0](#)

[IEAF-2001](#)

[KAOS/LIB-V](#)

[REAC*3](#)

[RACC-PULSE](#)

[VITAMIN-B6](#)

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
7 th International Conference on Facility Operations - Safeguards Interface	Feb. 29-Mar. 4, 2004 Charleston, South Carolina	http://ntr.ornl.gov/ANS2004	passed
40 th 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/	
5 th 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	
1 st International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry	Sept. 4-8, 2004 Helsinki, Finland	http://www.eanm.org/eanm.php?kopf=head/hd_calendar.html&worte=calendar/calendar.php	future
12 th International Conference on the Physics of Highly Charged Ions	Sept. 6-10, 2004 Vilnius, Lithuania	http://www.itpa.lt/hci2004/	Apr. 15, 2004
16 th 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

Name of Conference	Date and Location	Web Site	Abstract/Paper Submission Date
International Conference on Nuclear Data for Science and Technology "ND2004"	Sept. 26-Oct. 1, 2004 Santa Fe, New Mexico	http://t16web.lanl.gov/nd2004/	paper: 9/26/04
11 th International Congress on Neutron Capture Therapy (ISNCT-11)	Oct. 11-15, 2004 Boston, Massachusetts	future site	
Monte Carlo 2005 Topical Meeting	Apr. 17-21, 2005 Chattanooga, Tennessee	http://meetingsandconferences.com/MonteCarlo2005	call for papers

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 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.it or see the website: <http://www.itpa.it/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).

21st Zurich Short Courses on Modeling and Computation of Multiphase Flows

Multiphase flows and heat transfer with phase change are of interest to researchers and engineers working in power, nuclear, chemical-process, oil-and-gas, cryogenic, space, micro-technology, and other industries. Courses similar to this one have been offered in the past at Stanford University, at the University of California-Santa Barbara and for 20 years now at ETH-Zurich; over 1200 participants attended the Zurich courses. These courses will be offered **March 22-26, 2004**, and hosted by the Swiss Federal Institute of Technology (ETH) in Zurich. You will find detailed information about the course, as well as a registration form, at

<http://www.lkt.mavt.ethz.ch/courses/multiphase/Short-Course.html>.

Training Course on Decontamination and Decommissioning

Argonne National Laboratory (ANL) is offering this training course **March 8-12, 2004**, in Las Vegas, Nevada. The purpose of the course is to provide information on the basic steps in the decommissioning process and also to impart lessons learned from past experience in decommissioning. Elements learned at this training course will assist in decision-making, planning, and implementation associated with decommissioning. Moreover, a major objective of this training course is to demonstrate the need for early and complete project planning to achieve safe and cost-effective decommissioning. A registration fee of \$1095.00 is required. A course description and registration form is available at <http://www.td.anl.gov/D&D>. Applicants are encouraged to register electronically. Early registration is highly recommended due to the limited class size.

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), Jülich (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. 24-27	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://mcnpworkshops.com>

MCNPX homepage: <http://mcnp.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://mcnpworkshops.com>.

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://meetingsandconferences.com/MonteCarlo2005> . 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.

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@fcc.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@fcc.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@mcnpworkshops.com, url <http://mcnpworkshops.com> for details).

March 2004

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

Decontamination and Decommissioning Training Course, Mar. 8-12, 2004, Las Vegas, NV. Contact: Linda Legerski (tel 603-252-4836, fax 630-252-5287, email lindal@anl.gov, url <http://www.td.anl.gov/D&D/>).

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

21st Zurich Short Courses on Modeling and Computation of Multiphase Flows, Mar. 22-26, 2004, Zurich. Contact: Prof. G. Yadigaroglu (tel + 41 1 632 46 15, fax + 41 1 632 11 66, e-mail yadi@ethz.ch, url <http://www.lkt.mavt.ethz.ch/courses/multiphase/Short-Course.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/>).

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 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; vilewington@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/>).

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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Alamos, NM.

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Industries, Ltd., Osaka, Japan.

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Garching, Germany.

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Coupling of Time-Dependent Neutron Transport
Theory with the Thermal Hydraulics Code ATHLET
and Application to the Research Reactor FRM-II.. . .
Pautz, A. et al.. . . November 2003. . . Gesellschat fur
Analgen, Garching, Germany; Technische University
at Muchen, Garching, Germany.

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Frohner, F.H.. . . November 2003. . .
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Accelerator Transmutation of Waste Applications.. . .
Vickers, L.D.. . . November 2003. . . BWXT Pantex,
Amarillo, TX.

Nucl. Sci. & Eng., 145, 376-389. . . . Using
NJOY99 and MCNP4B2 to Estimate the Radiation
Damage Displacements per Atom per Second in Steel
Within the Boiling Water Reactor Core Shroud and
Vessel Wall from Reactor-Grade
Mixed-Oxide/Uranium Oxide Fuel for the Nuclear
Power Plant at Laguna Verde, Veracruz, Mexico. . .
Vickers, L.. . . November 2003. . . BWXT Pantex,
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of Technology, Stockholm, Sweden.

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Milan, Italy; Studsvik Scandpower, Inc., Idaho Falls,
ID

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- Nucl. Technol., 143, 290-308.** . . Step Complexity Measure for Emergency Operating Procedures - Determining Weighting Factors. . . Park, J. et al. . . September 2003. . . KAERI, Daejeon, Korea.
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- Nucl. Technol., 143, 364-372.** . . Power Profile Evaluation of the JCO Precipitation Vessel Based on the Record of the Gamma-Ray Monitor. . . Tonoike, K. et al. . . September 2003. . . JAERI, Ibaraki-ken, Japan.
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- Nucl. Technol., 144, 186-200.** . . Examination of Spent Pressurized Water Reactor Fuel Rods After 15 Years in Dry Storage. . . Einziger, R.E. et al. . . November 2003. . . Argonne National Laboratory, Argonne, IL; ANL-West, Idaho Falls, ID.
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University, College Station, TX; Argonne National Laboratory-West, Idaho Falls, ID.; Nuclear Technology Safety Center, Almaty, Kazakhstan.

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