
Radiation Safety Information Computational Center



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It is better to deserve honors and not have them than to have them and not deserve them.—Samuel Clemens (Mark Twain))

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CHANGES TO THE RSICC CODE AND DATA COLLECTION

[CCC-760/PARTISN 5.97](#)

Los Alamos National Laboratory, Los Alamos, New Mexico, contributed a newly frozen version of this code system to solve the linear Boltzmann transport equation for neutral particles using the deterministic (SN) method. PARTISN (PARAllel, TIme-Dependent SN) is the evolutionary successor to CCC-547/DANTSYS. The PARTISN code package is a modular computer program package designed to solve the time-independent or dependent multigroup discrete ordinates form of the Boltzmann transport equation in several different geometries. The modular construction of the package separates the input processing, the transport equation solving, and the post processing (or edit) functions into distinct code modules: the Input Module, the Solver Module, and the Edit Module, respectively.

Both the static (fixed source or eigenvalue) and time-dependent forms of the transport equation are solved in forward or adjoint mode. In addition, PARTISN now has a probabilistic mode for Probability of Initiation (static) and Probability of Survival (dynamic) calculations. Vacuum, reflective, periodic, white, or inhomogeneous boundary conditions are solved. General anisotropic scattering and inhomogeneous sources are permitted. PARTISN solves the transport equation on orthogonal (single level or block-structured AMR) grids in 1-D (slab, two-angle slab, cylindrical, or spherical), 2-D (X-Y, R-Z, or R-T) and 3-D (X-Y-Z or R-Z-T) geometries.

PARTISN 5.97 is designed for UNIX, Linux or Windows systems. It has been implemented on Linux PC, Windows PC, SGI, IBM RS/6000, Compaq Alpha and Macintosh workstations. The program is written in ANSI standard F95 with a few C language routines used to interface to the operating system. PARTISN stresses most f95 compilers, so please ensure that the compiler version you are using is at least as recent as the one listed below on which the LANL developers ran the code system.

- Lahey Fujitsu LF95 Fortran Compiler Version 6.20 on Intel PC running Linux
- PGI Fortran compiler version 7.2-5 on X86_64-linux
- Intel Fortran Compiler Version 10.0.023 under Linux
- Absoft 8.2 on Redhat Enterprise WS 3.0
- Macintosh with Absoft
- IBM XLF Fortran Compiler on IBM RS/6000
- MIPSpro Fortran Compiler Version 7.3.1.3m on SGI
- Compaq Fortran Compiler V5.5A.7 on Compaq Alpha under Digital Unix
- Cray J90 and T90 with CF90 Version 3.0.2.1
- Lahey-Fujitsu Fortran Compiler version 7.1 under Windows in a Cygwin environment

A 32-bit serial-mode Windows executable is included in the package. No other executables are included, so compilers are required on all other systems (Unix, Linux and all parallel systems). The distributed executable was built at RSICC under Windows Vista in a Cygwin terminal with Lahey/Fujitsu Fortran 95 Compiler Release 7.10.02.

The package is transmitted in a tar file which contains documentation, PARTISN source files, a serial Windows executable, installation procedures, and a test case. Reference: LA-UR-08-07258 (Revised Nov. 2008). Fortran 95 and C; IBM, SGI, Alpha, Cray, Mac and PC - Linux and Windows (C00760MNYCP00).

1st ANNUAL WNU SCHOOL ON RADIOISOTOPES

The World Nuclear University (WNU) is sponsoring the 1st Annual WNU School on Radioisotopes, May 15--June 4, 2010, in Seoul, Republic of Korea. The school is hosted by the Korea Atomic Energy Research Institute with special support from the International Atomic Energy Agency and the World Council on Isotopes.

The WNU School on Radioisotopes (RI School) is aimed at young professionals involved in managerial roles related to radioisotope (RI) application and production. Selected applicants will develop a broad understanding of the wide range of RI applications, RI production methods, and the main challenges encountered by practitioners in this field. Participants will also enjoy the opportunity to develop a worldwide network of contacts of unique value to their current and long-term careers.

The RI School's intensive three-week programme features:

- Lectures by prominent experts in radioisotope application and production
- Small-group and team-building work, where participants tackle case studies and develop proposals for resolving RI-related issues
- Technical visits to RI-related sites including the Korea Atomic Energy Research Institute (KAERI), Korea Institute of Nuclear Safety (KINS), and the Korea Institute of Radiological and Medical Sciences (KIRAMS).

The curriculum covers topics relevant to radioisotope applications:

- Operations, including the production chain for open and sealed sources, quality assurance and control, packaging and transport of radioactive materials, radiation metrology and dosimetry, waste management and decommissioning
- Current and future applications, including nuclear techniques in human health, industrial process management, food and agriculture, environmental protection, and life sciences
- Regulatory frameworks and infrastructure, including the international safety regime for radioisotopes and the international radiological protection system
- Key contexts, including the socio-economics of RI programmes, public communications, and the role of research reactors and accelerators.

The RI School is open each year to 80 professionals from companies, governments, research institutes and regulatory authorities expected to play key roles in the field. An application form can be obtained from the WNU website (www.world-nuclear-university.org) and should be emailed to the WNU Coordinating Centre no later than **October 30, 2009**.

Each successful applicant who completes the RI School receives a WNU Certificate and such professional credit as may be awarded by that person's own employer.

Applicants must provide evidence of meeting all the following requirements:

- (1) A Master's degree or equivalent (exceptions to be considered on the basis of unusual merit)
- (2) Knowledge of the basic principles of nuclear science
- (3) Demonstrated academic and professional excellence
- (4) Proficiency in English, the working language of the RI School.

In the selection of participants, relevant work experience will also weigh heavily as a positive factor.

The cost of participation is a fixed tuition fee of €5,000 plus travel to and from Seoul, Korea. The tuition fee will cover all coursework, technical tours, lodging and meals. While attending the RI School, participants will occupy individual rooms, and enjoy a diverse programme of social events and excursions. Family members may accompany participants for an additional expense.

In general, participants' employers are expected to cover tuition and travel costs. However, some applicants from developing countries should be eligible for assistance from the IAEA and Korean government.

Selection of applicants will be made through a consultation process, led by the WNU Coordinating Centre. The goal is a synergistic, internationally diverse mix of top professionals. The application process will place weight on each applicant's demonstrated leadership potential.

Inaugurated in 2003 and encompassing key institutions of nuclear learning in more than 30 nations, the WNU partnership has four "Founding Supporters": the International Atomic Energy Agency, the OECD's Nuclear Energy Agency, the World Nuclear Association and the World Association of Nuclear Operators.

The mission of the World Nuclear University is to enhance education and leadership in the peaceful applications of nuclear science and technology. A non-profit corporation, the WNU pursues this mission through programmes organized by the WNU Coordinating Centre in London. These cooperative activities are designed to harness the strengths of partnership members in pursuit of shared purposes.

CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users and contributors advised of conferences, courses, and symposia in the field of radiation protection, transport, and shielding through this section of the newsletter. Should you be involved in the planning/organization of such events, feel free to send your announcements and calls for papers via email to riceaf@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.

TRAINING

Introductory and Advanced MCNP Visual Editor Training

Date 2009	Class	Location
October 26–30	Introduction to MCNP using the MCNP/MCNPX Visual Editor	Reno, NV
November 2–6	Advanced Visual Editor	Las Vegas, NV

Classes are taught using the most recent (beta) version of the Visual Editor Code. All class attendees must have a valid MCNP/MCNPX RSICC license. Bring proof of receipt (letter or email) to the class.

The introductory classes combine teaching on MCNP physics, along with instructions on how to use the Visual Editor. The advanced class assumes the user has experience using MCNP or MCNPX and focuses on Visual Editor topics. Computer demonstrations and exercises will focus on creating and interrogating input files with the Visual Editor. Advanced visualization work using MCNP will also be demonstrated. Both the introductory and advanced classes 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. The course description and registration information can be found at <http://www.mcnpvised.com/index.html>.

MCNPX Training

The MCNPX team at Los Alamos National Laboratory offers interactive workshops for training users in the capabilities of MCNPX. Three levels are offered: introductory (for users with 0-1 year of

2009 Classes		
October 12–16	Intermediate/Threat Reduction	Portugal *

***Contact [NEA Computer Program Service](#) for additional information.**

experience), intermediate (for users with 1-3 years of experience), and advanced (for users with more than 3 years of experience). The list of workshops below is somewhat tentative, as workshops may be added, removed, or modified throughout the year, depending on user interests.

Cost of the U.S. workshops is \$2,300 US with an early registration discount of \$300 (i.e., if paid 30 days before the scheduled workshop). This fee includes applicable Gross Receipt taxes. Workshops with fewer than 15 registrants on the early registration date are subject to cancellation or rescheduling.

In order to process non-US citizens by the class date, non-US citizens shall register at least 6 weeks prior to the start of the training class. All non-US citizens who reside in countries listed in the U.S. Code of Federal Regulations, Title 10, Part 810.8, are required to register at least 8 weeks prior to the start of the training class. These participants must be processed by the DOE and should not make travel arrangements until approval from DOE has been obtained.

Additional information about the courses can be found at the website, <http://mcnpx.lanl.gov/>. To register send an email to [Randy Schwarz](#), indicating the workshop of interest to you.

MCNP Class Schedule

October 13–16, 2009	Advanced: Criticality Calculations	Los Alamos, NM
October 19–23, 2009	Introduction to MCNP5 and MCNPX	Los Alamos, NM
October 26–29, 2009	Advanced: Variance Reduction	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), Advanced Geometry (repeated structures specification), Variance Reduction Techniques, Statistical Analysis, Criticality, Plotting of Geometry and Tallies, and Neutron Photon/Electron Physics.

Intermediate workshops cover the entire spectrum of MCNP/MCNPX at a much faster pace and are more in-depth than introductory classes. These workshops are open to new users; the first day of class is a review of basics. However, the intermediate workshops are targeted toward more experienced users and are more problem solving than lecture classes. Intermediate workshops feature flexible course content, skip topics of least interest to the participants, and provide significantly more depth than introductory classes.

Advanced classes are for people with MCNP experience who want to extend their knowledge and gain depth of understanding. Most areas of MCNP operation will be discussed in detail, with emphasis on Advanced Geometry, Advanced Variance Reduction Techniques, and other advanced features of the program. Time will be available to discuss approaches to specific problems of interest to students. Classes on specific topics are offered when there is sufficient interest. In the recent past, classes on variance reduction and on criticality have been taught.

Registration and the most current information can be found at <http://mcnp-green.lanl.gov/classinformation.html>.

[SCALE Training Courses at ORNL](#)

Date	Title	Description
October 19-23, 2009	KENO-VI/MAVRIC	KENO-VI: Criticality safety using the generalized geometry version of KENO MAVRIC: 3-D automated variance reduction for deep-penetration and complex shielding problems
October 26-30, 2009	SCALE Lattice Physics and Depletion Course (ORIGEN-ARP/TRITON)	ORIGEN-ARP: Isotopic depletion/decay and source terms using latest version of ORIGEN TRITON: 2-D reactor physics analysis using NEWT
November 3-6, 2009	TSUNAMI Sensitivity/ Uncertainty Tools Course (Experienced KENO users only)	1-D and 3-D sensitivity/uncertainty analysis using XSDRNPM and KENO V.a
November 9-13, 2009	KENO V.a	Criticality safety with the most widely used version of KENO

The registration fee is \$2300 for each course. A discount of \$200 per each additional week will be applied for registration to multiple courses. Class size is limited and course may be canceled if minimum enrollment is not obtained one month prior to the course. Course fees are refundable up to one month before each class. Note that all attendees must be registered SCALE 6 users. All foreign national visitors must register a minimum of 40 days prior to the start date of the training course they plan to attend. Course descriptions may be found at http://www.ornl.gov/sci/scale/course_description.htm.

CONFERENCES

1st International Nuclear & Renewable Energy Conference

The 1st International Nuclear & Renewable Energy Conference (INREC'10) will be held March 21–24, 2010, in Amman, Jordan. It is the first in a planned series of biannual meetings focusing on the practical aspects of nuclear energy. The meeting covers the synergetic integration of nuclear engineering with electrical power production, coupling to existing power grids and the design of smart grid systems, to intelligent instrumentation and control, and monitoring of processes relevant to radiation safety and nuclear safeguards. Research work addressing alternate energy forms are also welcome.

The call for papers has been issued for work related to the following main topics:

- Nuclear reactor technology
- Education & training
- Policy studies & issues
- Nuclear radiation and shielding
- Nuclear physics
- Nuclear power in developing countries
- Enabling technologies for nuclear applications
- Renewable energy
- Water, hydrogen and energy storage

Authors should follow the guidelines posted in the symposium website: <http://inrec10.inrec-conf.org/default.aspx?id=submission>. Submitted papers will be peer-reviewed. Accepted and presented papers will be published in the proceedings of the INREC'10 conference. A poster session will also be organized to report the latest research/project findings.

You will find the necessary conference information at the website, <http://inrec10.inrec-conf.org/>.

2010 Topical in Radiation Protection and Shielding (RPSD), Isotopes & Radiation (IRD), and Biology and Medicine (BMD)

The Radiation Protection and Shielding Division, the Isotopes and Radiation Division, and the Biology and Medicine Division of ANS are joining to organize the 2010 Topical in Radiation Protection and Shielding (RPSD), Isotopes & Radiation (IRD), and Biology and Medicine (BMD), April 19–23, 2010, in Las Vegas, Nevada. Extended abstracts may be submitted to the technical program chair at Robert.Hayes@WIPP.ws by October 10, 2009, for topics which fall under the following session tracks:

- Medical Physics Track
- Radiation Detection and Measurement Track
- Radiation Shielding Track
- Radiation Protection Track
- Radiation Transport Calculations Track

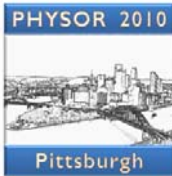
Check the conference website, <http://local.ans.org/nv/jtm2010.html>, often for up-to-date information.

ND2010

The 2010 International Conference on Nuclear Data for Science and Technology will be held April 26–30, 2010, at Jeju Island, South Korea. The meeting is organized by the Korean Nuclear Society and Korea Atomic Energy Research Institute under the auspices of the OECD Nuclear Energy Agency. The conference is the 11th in a series held every three years.

The purpose of these conferences is to bring together scientists and engineers involved in the production or use of nuclear data for various applications. The ND2010 conference will cover measurements, theoretical model developments, evaluation, processing, validation and dissemination activities. The scope of the conference includes the following fields of application: fission and fusion energy, accelerator technology, dosimetry and shielding, astrophysics and cosmology, safeguards and security, space, medicine, environment. The corresponding needs for improved nuclear data will be addressed. Additional information about the conference may be obtained from Jonghwa Chang, jhchang@kaeri.re.kr or Young-Ouk Lee, yolee@kaeri.re.kr. The website is <http://www.nd2010.org/>.

PHYSOR 2010



The PHYSOR 2010 Topical Meeting will be held May 9–14, 2010, in Pittsburgh, Pennsylvania. The conference is sponsored by the American Nuclear Society (ANS) Reactor Physics Division and co-sponsored by the ANS Mathematics and Computation Division and the American Society of Mechanical Engineers (ASME). The conference theme, *Advances in Reactor Physics to Power the Nuclear Renaissance*, will provide a platform for international experts to exchange ideas and the latest developments in reactor physics, mechanical and material engineering and related nuclear technologies in light of the nuclear renaissance.

Full papers are to be submitted by **October 31, 2009**, for one of the following tracks:

- Nuclear Data
- Deterministic Transport Theory
- Monte Carlo Methods
- Reactor Analysis and Optimization
- Reactor Design and Operation
- Nuclear Fuel Cycle
- Nuclear Criticality Safety
- Transient and Safety Analysis
- Research Reactors and Spallation Sources
- Integral Experiments and Facilities for Safety Research
- Verification, Validation and Uncertainty Analysis
- Fuel, Materials and Mechanical Analysis
- Radiation Applications and Nuclear Safeguards
- Nuclear Power and Sustainable Development

Bookmark the website, www.physor2010.org, and check it periodically for news and updates. You may also contact the PHYSOR 2010 Technical Program Chair, Mohamed Ouisloumen, Westinghouse Electric Company, 4350 Northern Pike, Monroeville, PA 15146 (phone +1-412-374-2148, fax +1-412-374-4500, email info@physor2010.org).

Current Problems in Nuclear Physics and Atomic Energy

The 3rd International Conference on Current Problems in Nuclear Physics and Atomic Energy (NPAAE-Kyiv2010), which will be held June 7–12, 2010, in Kyiv, Ukraine. This conference is the continuation of the conferences held in Kyiv in 2006 and 2008. The NPAAE-Kyiv2010 conference is organized by the National Academy of Sciences of Ukraine (NASU, <http://www.nas.gov.ua>) the Institute for Nuclear Research of NASU, Kyiv (KINR, <http://www.kinr.kiev.ua>) in collaboration with Taras Shevchenko National University of Kyiv (NTSU, <http://www.univ.kiev.ua>).



Authors are invited to submit a one page abstract (300–500 words) by **March 1, 2010**, via e-mail to npae-kyiv2010@kinr.kiev.ua on the following topics:

- Collective processes in atomic nuclei
- Nuclear reactions
- Nuclear structure and decay processes
- Rare nuclear processes
- Neutron and reactor physics, nuclear data
- Problems of atomic energy
- Applied nuclear physics in medicine and industry
- Experimental facilities and detection techniques

All correspondence concerning scientific program, publication and other questions should be sent to:

Dr. Vitali Yu. Denisov
Institute for Nuclear Research,
Prospect Nauky, 47
Kyiv, 03680
Ukraine
(fax +38 044 525 44 63, email npae-kyiv2010@kinr.kiev.ua)


Information on the Conference can be found at the website: <http://www.kinr.kiev.ua/NPAAE-Kyiv2010>.

2010 Joint Symposium on Supercomputing in Nuclear Applications + Monte-Carlo

Planning has begun for the combined Supercomputing in Nuclear Applications (SNA) and Monte-Carlo (MC) 2010 meeting. The Japan Atomic Energy Agency Center for Computational Science and e-systems and Nuclear Science and Engineering Directorate will host the meeting October 18–21, 2010, at the Hitotsubashi Memorial Hall in Tokyo.

Extended abstracts of 1500 words may be submitted by **September 2009** on the following topics:

- Computational Applications (Nuclear Reactor Analysis, Nuclear Safety, Thermal Hydraulics, Biomedicine, Nano-Science, Nuclear Fuel Cycle / Repository Performance, Materials, Fluid Dynamics, Plasma Physics / Fusion, Earthquake Proof, Structural Analysis, Shielding, Dosimetry, Radiation Effect, Space and Aviation, etc.)
- Computational Science (Applications, Methodology, Modeling, Code Development, Verification, Basic Data, etc.)
- Computer Science (Visualization, Tools, Hardware, Middleware, etc.)
- Information Technology and its Applications (CAE, Communications, etc.)

- Computational Methods using High Performance Computers (Parallel Computing, Grid Computing, Custom Computing, etc.)
- Theory for Monte Carlo Simulation
- Physics Modeling in Monte Carlo Simulation 

Bookmark the website, <http://sna2010.jaea.go.jp/>, to keep abreast of developments for the meeting. You may also contact sna2010@ml.jaea.go.jp.

CALENDAR

October 2009

International Conference on Opportunities and Challenges for Water Cooled Reactors in the 21st Century, Oct. 27–30, 2009, Vienna, Austria. Contact: Ms. Irina Orlova (phone +43-1-2600-21314, fax +43-1-2600-7, email I.Orlova@iaea.org) url <http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=35251>.

12th International Group on Research Reactors (IGORR), Oct. 28–30, 2009, CIAE-Beijing, P.R. China. Contact: jgorr2009@ciae.ac.cn.

November 2009

15th BEAMnrc Workshop, Nov. 2–5, 2009, Ottawa, Canada. Contact: Dave Rogers, Physics Department, Carleton University, 1125 Colonel By Drive, Ottawa, Ontario, Canada, K1S 5B6 (phone 613-520-2600x4374, fax 613-520-4061, email BEAM_Workshop@irs.phy.nrc.ca) url <http://www.physics.carleton.ca/~drogers/BEAM/course/>.

2009 ANS Winter Meeting, and Nuclear Technology Expo Nov. 15–19, 2009, Washington, DC. Contact: Carl Rau, Bechtel Nuclear Power, 5275 Westview Dr., Frederick, MD 21703 (phone 301-228-8740, fax 301-698-4776, email tapolloc@bechtel.com) url http://www.new.ans.org/meetings/m_64.

(YPC2009) 2009 Young Professional Congress, Embedded ANS Topical, Nov. 15–19, 2009, Washington, DC. Contact: Dave Pointer, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439 (phone 630-252-1052, email david.pointer@anl.gov) url <http://www.ans-ypc.org/>.

March 2010

INREC'10, March 21–24, 2010, Amman, Jordan. URL <http://inrec10.inrec-conf.org/>.

April 2010

ANS Student Conference, April 8–11, 2010, Ann Arbor, Michigan. Contact Travis Trahan (tjtrahan@umich.edu) or Michaela Eddy (eddy.michaela@gmail.com) url <http://committees.ans.org/students/>.

Pacific Northwest International Conference on Global Nuclear Security-the Decade Ahead, April 11–16, 2010, Portland OR. Contact: Carrie Mathews (phone 509-375-6783, email carrie.mathews@pnl.gov) url <http://pnwccgs.pnl.gov/PNIC/PNIC.stm>.

1st Joint Topical Meeting of the Radiation Protection & Shielding, Isotopes & Radiation, and Biology & Medicine Divisions, April 19–23, 2010, Las Vegas, Nevada. Contact: <http://local.ans.org/nv/jtm2010.html>.

2010 International Conference on Nuclear Data for Science and Technology, April 26–30, 2010, Jeju Island, South Korea. Contact: Jonghwa Chang, jhchang@kaeri.re.kr or Young-Ouk Lee, yolee@kaeri.re.kr. The website is <http://www.nd2010.org/>.

May 2010

PHYSOR 2010, May 9–14, 2010, Pittsburgh, PA. Contact: Mohamed Ouisloumen, Westinghouse Electric Company, 4350 Northern Pike, Monroeville, PA 15146 (phone +1-412-374-2148, fax +1-412-374-4500, email info@physor2010.org) url: www.physor2010.org.

1st Annual WNU School on Radioisotopes, May 15–June 4, 2010, Seoul, Republic of Korea. URL <http://www.world-nuclear-university.org/about.aspx?id=25726>.

June 2010

3rd International Conference “Current Problems in Nuclear Physics and Atomic Energy,” (NPAE-Kyiv2010), June 7 - 12, 2010, Kyiv, NPAE Ukraine. Contact: Dr. Vitali Yu. Denisov, Institute for Nuclear Research, Prospect Nauky, 47, Kyiv, 03680, Ukraine (fax +38 044 525 44 63, email npae-kyiv2010@kinr.kiev.ua) url <http://www.kinr.kiev.ua/NPAE-Kyiv2010>.

ANS Annual Meeting, June 13–17, 2010, San Diego, CA. Contact: url <http://www.new.ans.org/meetings/file/133>

October 2010

SNA2010 and MC2010, Oct. 18–21, 2010, Tokyo. Contact: sna2010@ml.jaea.go.jp, url <http://sna-mc-2010.jaea.go.jp/>.