

Radiation Safety Information Computational Center



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*Three men were laying brick.
The first was asked: "What are you doing?"
He answered: "Laying some brick."
The second man was asked: "What are you working for?"
He answered: "Five dollars a day."
The third man was asked: "What are you doing?"
He answered: "I am helping to build a great cathedral."
Which man are you?—Charles M. Schwab*

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CHANGES TO THE RSICC CODE AND DATA COLLECTION

CCC-757/SERPENT 1.1.7

SERPENT, contributed by the VTT Technical Research Centre of Finland, is a three-dimensional continuous-energy Monte Carlo reactor physics burnup calculation code, specifically designed for lattice physics applications. The code uses built-in calculation routines for generating homogenized multi-group constants for deterministic reactor simulator calculations. The standard output includes effective and infinite multiplication factors, homogenized reaction cross sections, scattering matrices, diffusion coefficients, assembly discontinuity factors, point-kinetic parameters, effective delayed neutron fractions and precursor group decay constants. User-defined tallies can be set up for calculating various integral reaction rates and spectral quantities. Internal burnup calculation capability allows SERPENT to simulate fuel depletion as a completely stand-alone application. Extensive effort has been put into optimizing the calculation routines and the code is capable of running detailed assembly burnup calculations similar to deterministic lattice codes within a reasonable calculation time. The overall running time can be further reduced by parallelization.

SERPENT can be used for various reactor physics calculations at pin, assembly and core levels. The continuous-energy Monte Carlo method allows the modeling of any critical reactor type, including both thermal and fast neutron systems. Suggested applications of SERPENT include group constant generation, fuel cycle studies, validation of deterministic lattice physics codes, and educational, training

and demonstration purposes. Minor code updates are distributed to registered users by e-mail. Registration can be accomplished by contacting the developer team at <http://montecarlo.vtt.fi>.

Memory usage may become a limiting factor in very large burnup calculation problems, especially in the parallel calculation mode. A standard C compiler is needed for building the source code. MPI libraries must be installed to run SERPENT in the parallel calculation mode. The code uses the GD open source graphics library for producing graphical output. The source code can also be compiled without the MPI and GD functionality.

The package is transmitted on a DVD as a zip file which includes the referenced documents in PDF format, source codes, data files, and example problems. Reference: User's Manual (September 2009). Linux-based PC, Macintosh, UNIX workstations, ANSI-C (C00757MNYWS00).

CCC-764/MURE

The Laboratoire de Physique Subatomique et de Cosmologie de Grenoble, France, and Institut de Physique Nucléaire d'Orsay, France, through the OECD NEA Data Bank, Issy-les-Moulineaux, France, contributed the MURE package which performs nuclear reactor time-evolution using successive calls to the widely-used particle transport code MCNP. MURE is an object-oriented package and therefore users are free to interact with it in their own way or to use the evolution controls already developed. MURE also provides coupling of the neutronics (with or without fuel burn-up) and thermal-hydraulics using a sub-channel 3D code, COBRA-EN. A graphical interface is provided to visualize and post-treat the results, including radiotoxicity calculations, waste heats and more. An interface to NJOY to generate cross-sections in the MCNP ACE format (endf2ace) is also provided in the MURE package. MURE provides an interface to MCNP to build complex geometries using object-oriented programming and/or the ability to calculate nuclear fuel depletion. Neutron transport is performed by MCNP/MCNPX and depletion is calculated using numerical integration via the Runge-Kutta algorithm. Successive MCNP runs and Bateman equation resolutions are performed until the end of the evolution time. Interactions during the evolution calculation allow the user to impose conditions such as power levels, constant k_eff, etc. It is easy for the user to implement evolution control owing to the object-oriented programming and inheritance mechanism. Standard evolutions evaluate one-group constant reaction rates between two MCNP runs for solving the Bateman equations at each step. However, Predictor-Corrector methods can also be used, as well as "quasi-multi group" flux where reaction rates are calculated outside of MCNP from flux tallies for each cell with a highly discretized energy binning. Reaction rates in this method are calculated after each MCNP run using the same ACE cross-section files that were used in the neutron transport; the advantage of this method is a large CPU time gain in MCNP (at least a factor 30). See <http://ipsc.in2p3.fr/gpr/MURE/html/MURE.html> for more details. MURE runs on PC computers under LINUX and UNIX operating systems. It was tested at RSICC using LINUX OS. The package is transmitted on a CD in .tar format which includes reference material, documentation, source files, and sample problems. Reference: IPNO-90-01 (January 2009). LINUX/UNIX, C++; PC 586 (C00764MNYWS00).

PSR-352/SCAMPI

SCAMPI was contributed by the ENEA/FPN-FISNUC (Nuclear Data Centre), Bologna, Italy, through the OECD NEA Data Bank, Issy-Les Moulineaux, France. SCAMPI (Scale and Ampx Processing Interface) was prepared to facilitate the calculation procedure for creating problem-dependent cross sections from problem-independent multigroup data. It consists primarily of modules derived from PSR-315/AMPX-77 and CCC-545/SCALE4.3. Included in the package are AIM, AJAX, ALE, ALPO, BONAMI, CORECTOL, CSAS, FILTER, GIP, ICE, LAVA, MALOCS, NITAWL, PERFUME, RADE, UNITAB, WAX, and XSDRN. The CSASIN full-screen PC input processor that guides the user through the CSAS module input has been modified for SCAMPI and is also included. The CSAS module was modified to remove the interface with KENO and automatically provide output of an ANISN-formatted working library for use with codes such as CCC-543/TORT-DORT, CCC-254/ANISN-ORNL, or CCC-

474/MORSE-CGA. The GIP program was extracted from the CCC-543/TORT-DORT 2.12.14 package. The CSAS control module in SCAMPI uses engineering data and keyword input to perform resonance self-shielding, Doppler-broadening, and temperature interpolation of the thermal-scattering matrices for the specified geometry and mixtures through calls to SCALE and AMPX-77 functional modules. Thus, CSAS is an automated procedure which can create problem-dependent cross sections from data libraries in AMPX master library format. Note that no data libraries are included in SCAMPI. Data libraries must be in AMPX-77 format. The CORECTOL module can be used to convert AMPX-II master libraries to this format.

SCAMPI runs on Unix/Linux workstations. To facilitate installation, makefiles are included for IBM RS/6000, Sun, DEC Alpha, HP and Linux. Approximately 25 MB of disk space is required to build the executables. The programs are written in Fortran 77 and C. SCAMPI runs on these systems: IBM AIX with both the f77 and xlf90 compilers, Sun with both Solaris and SunOS4, DEC Alpha under OSF/1 and also on Ultrix, HPUX 9.0.3 as well as Linux machines. Included are the referenced documents, source files and makefiles written on one CD in a tar file compressed with the GNU gzip command. The CSASIN program is also included in the code package. Reference: FPN - P9H6-006 (September 2007), FIS-P815-005 (November 2003). Unix/Linux Workstation (P00352/MNYWS01).

DLC-235/VITJEFF3.1.BOLIB

VITJEFF3.1.BOLIB was contributed by the ENEA Italian National Agency for New Technologies, Energy and the Environment, Bologna, Italy, through the OECD NEA Data Bank, Issy-Les-Moulineaux, France. The VITJEFF31.BOLIB library for nuclear fission applications was conceived as the European counterpart of the VITAMIN-B6 American library, based on the ENDF/B-VI Release 3 nuclear data file. The present library has in particular the same group structure and the general features as VITAMIN-B6 and was produced using the same data processing methodologies, based on the NJOY and SCAMPI data processing systems. VITJEFF31.BOLIB is a multigroup coupled library (199 neutron groups and 42 photon groups) pseudo-problem independent cross section library in AMPX format for nuclear fission applications. VITJEFF31.BOLIB is based on the JEFF-3.1 OECD/NEA Data Bank nuclear data library and it was processed, through the NJOY-99.160 system, with an ENEA-Bologna revised GROUPR module and the ENEA-Bologna 2007 Revision of the SCAMPI system, in the VITAMIN-B6 energy group structure using the same parameters and calculation procedures. Files are transmitted on one CD in a compressed file format. References: FPN-P9H6-007 (February 2008). (D00235MNYPC00).

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 MCNP, Advanced MCNP, and Visual Editor Training

Date 2010	Class	Location
April 26-30	Introduction to MCNPX using the MCNPX Visual Editor	Las Vegas, NV
June 28-30	CAD to MCNP	Seattle, WA
July 12-16	Introduction to MCNP using the MCNPX Visual Editor	Anaheim, CA
July 29—23	Intermediate MCNP Visual Editor	Las Vegas, NV
August 2-4	Visualization of MCNP Data	Seattle, WA
September 13-17	Introduction to MCNP using the MCNPX Visual Editor	Myrtle Beach, SC
November 15-19	Introduction to MCNP using the MCNPX 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

2010 Classes		
Date	Class	Location
May 24–28	Intermediate MCNPX	Orlando, FL
August 16–20	Intermediate MCNPX	Seattle, WA
September 20–24	Intermediate MCNPX	Virginia Beach, VA
October 25–29	Intermediate MCNP5/MCNPX	Barcelona

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 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 is 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). Workshops with fewer than 15 registrants on the early registration date are subject to cancellation or rescheduling.

In order to process non-U.S. citizens by the class date, non-U.S. citizens must register at least 6 weeks prior to the start of the training class. All non-U.S. 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.

SCALE Training Courses

Date	Title	Description
April 29-30	Advanced TSUNAMI Sensitivity and Uncertainty Analysis Methods	NEA Data Bank, Paris
May 3-7	KENO-VI/MAVRIC	NEA Data Bank, Paris

The registration fee is \$2000 for each course; after February 1 registration is \$2300. 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.

NEA Training courses and workshops

- 6-9 April 2010
Training course on [Analytical Benchmarks: Case Studies in Neutron Transport Theory](#) using the Handbook (including computer codes) published on “Analytical Benchmarks for Nuclear Engineering Applications (Case Studies in Neutron Transport Theory).” This course is intended for transport methods developers and those who teach reactor physics and transport theory. In addition, the course would be appropriate for anyone with an analytical interest in solving equations and the application of numerical methods to obtain extreme accuracy. Teacher: Prof. Barry D. Ganapol. [Registration form](#).
- 3-7 May 2010
[SCALE Criticality Safety and Radiation Shielding Course](#), OECD/NEA Data Bank, co-sponsored by ORNL/RSICC, Issy-les-Moulineaux, France. [Registration form](#).
- 5-8 July 2010
Training course on [PENELOPE 2008](#) - A code system for Monte Carlo simulation of electron and photon transport. [Scope and objectives, syllabus and accommodation](#); [Registration form](#)

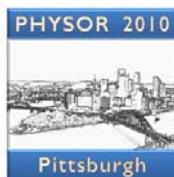
ORAU Offers Health Physics and Radiation Safety Training

ORAU is pleased to offer the following courses. If you wish to discuss having a customized course delivered at your site, please contact Paul Frame at 865.576.3388 or Paul.Frame@orau.org.

Course	Dates
CHP Part I Review	April 6–8
Gamma Spectroscopy	April 12–16
Introduction to Radiation Safety	April 19–23
Environmental Monitoring	May 10–14
MARSSIM	May 17–21
Radiation Safety Officer Training	June 21–25
Medical Radiation Safety Officer Training	Aug. 16–20
Applied Health Physics	Sept. 13–Oct. 15
Air Sampling for Radioactive Materials	Oct. 18–22
MARSSIM	Oct. 25–29
Radiation Medicine for Safety Professionals	Nov. 1–5
Site Characterization in Support of Decommissioning: Planning, Implementation, and Evaluation	Nov. 1–5
Introduction to Radiation Safety	Nov. 8–12
Gamma Spectroscopy	Dec. 6–10

CONFERENCES

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. 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).

ICONE18

The 18th International Conference on Nuclear Engineering (ICONE18) will be held May 17–21, 2010, in Xi'an, China. The American Society of Mechanical Engineers (ASME), Japan Society of Mechanical Engineers (JSME) and Chinese Nuclear Society (CNS) are jointly organizing the conference. Information regarding the conference can be found at the conference website, <http://www.asmeconferences.org/ICONE18/index.cfm>, which is also where abstracts must be submitted. In addition you may contact ICONE 18 Secretariat c/o Chinese Nuclear Society, P.O.Box 2125, Beijing 100822, China (phone 86-10-68555686, 68555597, fax 86-10-68527188, email icone18@ns.org.cn).

Symposium on Radiation Measurements and Applications

The 12th Symposium on Radiation Measurements and Applications (SORMA XII) will be hosted by the University of Michigan, May 24–27, 2010. This Symposium has been held at four to five year intervals since the series of technical meetings dealing with ionizing radiation and its applications began in 1964. Its focus has expanded over the decades to include the breadth of ionizing radiation measurement applications and technologies. Conference topics include:

Technology Areas

Analytical standards
Advances/applications of radiation detectors
Neutron detection: materials & methods
Detector materials
Timing and spectroscopy
Elemental determination
Radiography
Radiation sources
Detector electronics and signal processing
X-ray analysis
Data analysis and image reconstruction

Application Areas

Energy technology
Environmental and geosciences
Examination and evaluation
Materials research
Medical applications
Life sciences
Nonproliferation and homeland security
Space and planetary science
Nuclear materials management

The conference chairman is Prof. David K. Wehe, SORMA XII, 1906 Cooley Building, University of Michigan, 2355 Bonisteel Boulevard, Ann Arbor, MI 48109-2104. Add the website, <http://rma-symposium.engin.umich.edu/>, to your bookmarks to keep up with current information.

SATIF-10

The tenth meeting of the task force on Shielding Aspects of Accelerators, Targets and Irradiation Facilities (SATIF-10) will be held June 2–4, 2010, in Geneva, Switzerland. Particle accelerators have evolved over the last decades from simple devices to powerful machines and are having an increasingly important impact on research, technology and lifestyle. Today they cover a wide range of applications including material science and medical applications. In recent years, requirements from new technological and research applications have emerged and the number of accelerator facilities in operation, being commissioned, designed or planned has significantly increased. Their parameters (such as the beam energy, beam currents and intensities, targets composition, etc.) vary widely giving rise to new radiation shielding aspects and problems.

The activities of the Task Force on Shielding Aspects of Accelerators, Targets and Irradiation Facilities (SATIF) are sponsored by the OECD Nuclear Energy Agency (NEA) and its Nuclear Science Committee (NSC). The main objectives of the SATIF Meetings are to:

- * Promote the exchange of information among experts in the field of accelerator shielding and related topics,
- * Identify areas where international co-operation can be fruitful, and
- * Carry on a program of work in order to achieve progress in specific priority areas.

The conference website is <http://www.cern.ch/SATIF-10>. The conference chair, Marco Silari, can be reached at Marco.Silari@cern.ch.



Current Problems in Nuclear Physics and Atomic Energy

The 3rd International Conference on Current Problems in Nuclear Physics and Atomic Energy (NPAE-Kyiv 2010), 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 NPAE-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>).

All correspondence concerning the scientific program, publications 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/NPAE-Kyiv2010>.

ANS 2010 Annual Meeting

The theme for the 2010 ANS Annual Meeting is “Nuclear Science and Technology—The Right Fit. The Right Time.” It will be held in San Diego, CA, June 13–17, 2010. The general chairman is Ross T. Ridenoure of Southern California Edison, and the program Chair is Dr. A. Kurshad Muftuoglu of GE-Hitachi Nuclear Energy. Bookmark http://www.new.ans.org/meetings/calendar/d_6-13-2010 where announcements and updates will be posted.

ITART 2010

Imaging for Treatment Assessment in Radiation Therapy (ITART 2010) is the first biennial meeting to focus on quantitative imaging in radiation therapy. It will be held June 21–22, 2010, at the Gaylord National Resort & Convention Center, National Harbor, Maryland. Cancer therapy is rapidly shifting from a population-based to a personalized patient-based treatment plan tailored to the spatial distribution of biological properties in the tumor. Incorporation of comprehensive patient- and tumor-specific information enables design of more effective therapies and monitoring the treatment response will provide grounds for treatment adaptation if necessary. Rapid developments in imaging, particularly adoption of molecular imaging, offer unprecedented opportunities for achieving these goals. Unfortunately, several roadblocks, particularly related to inadequate image quantification, prevent full exploration of these strategies.

The American Association of Physicists in Medicine (AAPM), American Society for Therapeutic Radiation Oncology (ASTRO), European Society for Therapeutic Radiation Oncology (ESTRO), Radiological Society of North America (RSNA) and the National Cancer Institute (NCI) have come together to establish this biennial forum for basic and clinical researchers, practicing clinicians, industry and regulatory bodies to review what has already been achieved, brainstorm about needs and opportunities, and discuss strategies on how to most effectively overcome the roadblocks. While radiation therapy is a specific focus, many of the topics will be of general interest to researchers involved in

quantitative imaging applications. The meeting will feature a combination of renowned invited speakers and proffered content.

Program information, exhibitor information, registration, etc. is available at the conference website, <http://www.aapm.org/meetings/2010ITART/>. For general meeting questions you may contact Corbi Foster at corbi@aapm.org.

AFRIRPA 2010

The Eastern Africa Association for Radiation Protection (EAARP) invites you to the 3rd African Regional IRPA Congress (AFRIRPA 2010) in Nairobi, Kenya, September 13–17, 2010. The theme is “Strengthening Radiation Protection Infrastructures in Africa: Towards Establishing Effective and Sustainable Regional Cooperation and Networks.” AFRIRPA 2010 is co-sponsored by the International Atomic Energy Agency (IAEA), World Health Organization (WHO), International Radiation Protection Association (IRPA), the Government of Kenya, and others. It is organized in collaboration with the Association Marocaine de Radioprotection (AMR), South African Radiation Protection Association (SARPA) and Egyptian Radiation Protection Association (Egypt-IRPA).

AFRIRPA 2010 will attract radiation protection professionals; users and manufacturers of radiation technologies; service providers; regulators; governmental, non-governmental and international organizations; and members of the general public. It will provide a platform to share the latest scientific updates, current developments, and future trends in radiation technology and radiation protection.

Abstracts may be submitted by March 31. For information on abstract submission and registration, as well as sponsorship and exhibition opportunities, contact: Amidu Mustapha (email amustapha@uonbi.ac.ke, info@eaarp.or.ke, or eaarp@yahoo.co.uk). The conference website is <http://www.eaarp.or.ke>.

SNA & MC 2010

Japan Atomic Energy Agency is organizing the Joint International Conference on Supercomputing in Nuclear Application + Monte Carlo 2010 Tokyo (SNA + MC2010) to be held in Tokyo, October 17–20, 2010, at the Hitotsubashi Memorial Hall. The conference is designed to discuss computational science, technology and applications concerning nuclear research and Monte Carlo simulation from wide viewpoints. The conference is mainly composed of plenary and technical sessions. Submitted papers will be presented in oral or poster sessions. It is planned that papers of high quality will be peer reviewed and published in special issues of *Journal of Nuclear Science and Technology*. Student awards will be given to young students presenting outstanding work. Bookmark the website, <http://www.sna-mc-2010.org/>, to keep abreast of developments for the meeting. You may also contact CCSE, Japan Atomic Energy Agency 8F, Sumitomo-Ueno Bldg. No.8 , 6-9-3 Higashi-Ueno, Taito-ku, Tokyo 110-0015, Japan (email: info@sna-mc-2010.org or fax: +81-3-5246-2537).

3D S.UN.COP 2010

The Nuclear Research Group of San Piero a Grado (GRNSPG) of University of Pisa (UNIPI), the Institute for Energy (IE) of the Joint Research Center (JRC) of European Commission (EC), the University of Zagreb (FER) and the School of Industrial Engineering of Barcelona (ETSEIB) are jointly organizing the Seminar and Training to transfer competence, knowledge and experience in the area of Scaling, Uncertainty and 3D Coupled Code Calculations (3D S.UN.COP 2010).

The Seminar will take place from October 18–22, 2010, in Amsterdam, and October 25–November 5, 2010, at the Institute for Energy (IE) of JRC in Petten (The Netherlands). The deadline for registration

is June 15, 2010. The seminar is divided into three parts and participants may choose to attend a one-, two- or three-week course depending on their interest in the following topics:

- 1) Fundamental Theoretical Aspects of the Methodologies;
- 2) Industrial Applications (e.g. AECL, AREVA, Westinghouse, GEH) Coupling Methodologies and Code Hands-on Training (e.g. RELAP, CATHARE, PARCS, TRACE, Star-CD) and Special Sessions devoted to Computational Fluid Dynamics, Severe Accident Analysis, WEER and CANDU Technologies and GEN-IV;
- 3) Advanced User Training, including Code Hands-on Training for Transient Analysis and Foundation of Statistical Methods.

Further details will be available at: <http://nrgspg.ing.unipi.it/3dsuncop>.

CALENDAR

April 2010

1st Joint Topical Meeting of the Radiation Protection & Shielding, Isotopes & Radiation, and Biology & Medicine Divisions / 16th Biennial Topical of the Radiation Protection & Shielding Division, April 19-24, 2010, Las Vegas, NV. Contact: Robert Hayes (robert.hayes@wipp.ws) url <http://www.rpsd2010.com/>.

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. The website is <http://www.world-nuclear-university.org/about.aspx?id=25726>.

ICON18, May 17–21, 2010, Xi'an, China. Contact: ICON 18 Secretariat c/o Chinese Nuclear Society, P.O.Box 2125, Beijing 100822, China (phone 86-10-68555686, 68555597, fax 86-10-68527188, email icone18@ns.org.cn) url: <http://www.asmeconferences.org/ICON18/index.cfm>.

SORMA XII, May 24–27, 2010, Ann Arbor, MI. Contact: Prof. David K. Wehe, SORMA XII, 1906 Cooley Building, University of Michigan, 2355 Bonisteel Boulevard, Ann Arbor, MI 48109-2104. The website is <http://rma-symposium.engin.umich.edu/>.

June 2010

SATIF-10, June 2–4, 2010, Geneva, Switzerland. Contact: Marco Silari (Marco.Silari@cern.ch) url: <http://www.cern.ch/SATIF-10>.

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](mailto:npaekyiv2010@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>.

ITART 2010, June 21–22, 2010, National Harbor, MD. Contact: Corbi Foster (corbi@aapm.org) url: <http://www.aapm.org/meetings/2010ITART/>.

July 2010

International Youth Nuclear Congress, IYNC2010, July 12–18, 2010, Cape Town, South Africa. Contact:
<http://www.iync.org/iync-2010.html>.

August 2010

2010 ASME Fluids Engineering Division Summer Meeting Symposium on “Application of Best Estimate and Uncertainty Methods,” Aug. 1–4, 2010, Montreal. Contact:
<http://www.asmeconferences.org/FEDSM2010>.

September 2010

AFRIRPA 2010, Sept. 13–17, 2010, Nairobi, Kenya. Contact: Amidu Mustapha (email amustapha@uonbi.ac.ke, info@eaarp.or.ke, or eaarp@yahoo.co.uk) url <http://www.eaarp.or.ke>.

October 2010

SNA2010 and MC2010, Oct. 17–20, 2010, Tokyo. Contact: CCSE, Japan Atomic Energy Agency, 8F, Sumitomo-Ueno Bldg. No.8, 6-9-3 Higashi-Ueno, Taito-ku, Tokyo 110-0015, Japan (email info@sna-mc-2010.org, fax +81-3-5246-2537) url: <http://www.sna-mc-2010.org/>.

3D S.UN.COP 2010, Oct. 18–22, 2010, Amsterdam, and Oct. 25–Nov. 5, 2010, Petten, The Netherlands. Contact: Alessandro Petruzzi (email: a.petruzzi@ing.unipi.it, fax 0039 050 2210384) url <http://nrgspg.ing.unipi.it/3dsuncop>.

November 2010

2010 ANS Winter Meeting and Nuclear Technology Expo, Nov. 7–11, 2010, Las Vegas, NV. Contact:
http://www.new.ans.org/meetings/c_1.

March 2011

MTTA-13, March 13–18, 2011, College Station, TX. Contact: William D. (Dennis) James, Center for Chemical Characterization and Analysis, Texas A&M University, 3144 TAMU, College Station, TX 77843-3144 (phone 979 845-7630, email wd-james@tamu.edu) url:
<http://tti.tamu.edu/conferences/mtaa13/>.

June 2011

ANS Annual Meeting, June 26–30, 2011, Hollywood, FL. Contact: <http://www.new.ans.org/meetings>.
IRRMA-8, June 26–July 1, 2011, Kansas City, MO. Contact: William L. Dunn, Kansas State University (email dunn@k-state.edu) url <http://www.dce.k-state.edu/conf/irrma/>.