# Radiation Safety Information Computational Center

No. 463                                                                 September 2003

"The rung of a ladder was never meant to rest upon, but only to hold a man's foot long enough to enable him to put the other somewhat higher. -- Thomas Huxley

## David Trubey, Co-Founder of RSICC, Dies

It is with profound sadness that we inform our friends of the passing of **David Keith Trubey**, a co-founder of RSICC. David left this world peacefully on July 11 in Ocala, Florida. RSICC still benefits from the relationships established by Dave in the early days.

Dave was born in Coldwater, Michigan, on April 23, 1928. He and his brothers, William and Gaylord, grew up in Colon, MI, where they shared many of the responsibilities of running the family farm.  After graduating from Colon High School, Dave studied engineering at Lawrence Institute of Technology in Detroit (1946-1948).  In 1948 Dave entered Flight-Training School in the U.S. Navy, where he achieved the rank of Midshipman.  In 1951, Dave went into the Reserves and resumed his university education in physics at Michigan State College (now Mich. State Univ.) in East Lansing. In the following years, he completed an MS in Computer Science at the University of Tennessee.

David joined the ORNL Physics Division in 1953 and became involved in experimental research in shielding at the Graphite Reactor (X-10 Pile). He was among the initial group joining Everett Blizard in forming the Applied Neutron Physics Division in July 1955. He attended the Oak Ridge School of Reactor Technology and later (1960-1962) followed Blizard in teaching shielding in ORSORT. He joined the NPD Shielding Design Group.

In FY-1963, Trubey, with S.K. Penny and Betty F. Maskewitz founded the Radiation Shielding Information Center (RSIC), which quickly became the premier world facility for maintaining radiation shielding data and making this information available to researchers in the nuclear power industry, defense, and medicine. Trubey followed Penny as RSIC manager (1967-1970). He took a year off to work in environmental sciences at ORNL (1970-1971). Returning to RSIC, he served as senior scientist until his retirement in 1991. David developed contacts and worked with international shielding scientists, largely in connection with developing standards. His peers, through the American

Nuclear Society (ANS), recognized his work. He chaired the ANS Shielding & Dosimetry Division in 1974, and was named an ANS Fellow in 1976. He received the ANS Radiation Protection & Shielding Division Achievement Award in 1983, the ANS Standards Award in 1991, and won the ANS Rockwell Award in 1992 "for a lifetime of significant accomplishments in the field of radiation protection."

David is survived by his wife, Jean, of nearly 53 years, two sons, Robert and Richard, and four grandchildren. David was always available as a mentor and a consultant to RSIC/RSICC staff members and is sorely missed. Cards may be sent to Mrs. Jean Trubey, 11734 Egret Court, Dunnellon, FL 34432.

## Betty Maskewitz To Receive Weinberg Award

Betty F. Maskewitz, who co-founded and directed the Radiation Safety Information and Computation Center, has earned the American Nuclear Society's 2003 Weinberg Medal.

The award was established in 1995 to honor ORNL Director Emeritus Alvin M. Weinberg and to provide international recognition for contributions to the understanding of the social implications of nuclear technology.

Maskewitz's award recognizes a career devoted to sharing radiation shielding technology and information throughout the world. Employed at Oak Ridge from 1952 until her retirement in 1988, Maskewitz worked in various areas of data processing and computational support. She is an internationally recognized specialist in the fields of information sciences and engineering physics.

Maskewitz co-founded and later directed the Radiation Shielding Information and Computational Center, an international institute that is currently known as the RSICC. She was named an ANS fellow in 1983.

## MCNP5 Exchange Program Active Until April 2004

Just a reminder to requesters who received a prior version of MCNP from RSICC. You will be exempt from the transmittal fee for this release. ***This will be active until April 2004.*** To request the code and data package (C00710MNYCP00), complete an on-line request form on the RSICC website **http://www-rsicc.ornl.gov/order.html** and select MCNP5 package. In the comments field of the request form, please state your name and the installation at which you received the earlier version for verification.

## RSICC's New Mailing Address

We are settled into our new location! Our phone number remains the same at **865-574-6176**. Our new fax number is 865-241-4046; an alternative fax number is 865-574-6182. We want to thank you for your patience and understanding during our transition. Please note the new extension on the zip code of our new mailing address:

RSICC/ ORNL
PO Box 2008
Bldg. 5700, MS 6171
Oak Ridge, TN 37831-**6171**

# Available NRC Codes

Two U.S. Nuclear Regulatory Commission software packages transferred from the Energy Science and Technology Software Center, Oak Ridge, TN, to RSICC were processed this month. Please browse the computer code abstracts available at RSICC's web site for more information on these packages.

**CCC-691/SIMMER II (USSO)**                     **PSR-522/TRUMP**

# Changes to the Computer Code and Data Collection

One newly frozen package and was added to the computer code collection this month.

**PSR-333/CHENDF 6.13**

**OP SYS:** Unix, Linux,
        Windows, VMS
**Language:** Fortran 95
**Computers:** Workstations, PC,
        Vax
**Format:** Windows

The National Nuclear Data Center, Brookhaven National Laboratory, Upton, New York, contributed this newly frozen release of the ENDF utility codes, version 6.13, which supersedes all previous versions of the codes. The programs are written to process ENDF-6 formatted files including all formats approved up to and including the November 2001 CSEWG meeting except for the Generalized R-Matrix resonance region format and the generalized format for covariances (file 30). The programs can also process ENDF-5 formatted files. The following codes are included in the system.

| | |
|---|---|
| CHECKR | ascertains whether an evaluated data file conforms to the ENDF format |
| FIZCON | checks an evaluated data file for validity of data and conformity to recommended procedures, |
| GETMAT | selectively retrieves one or more materials from an ENDF formatted data file |
| INTER | calculates selected cross sections and integrals, |
| LISTEF | produces summary and annotated listings from either an ENDF-6 or ENDF-5 file |
| PLOTEF | produces graphical displays of a data file in either ENDF-6 or ENDF-5 format |
| PSYCHE | checks the physics content of an evaluated data file, |
| SETMDC | converts program source for use on different computers, and |
| STANEF | performs bookkeeping operations on an ENDF formatted data file. |

The programs should operate on any computer with sufficient memory and a Fortran compiler conforming to the Fortran 95 standard. The SETMDC utility configures CHENDF to run on Vax, workstations, PC's or any machine with an ANSI Fortran compiler. The distributed version of the programs, STANEF, CHECKR, FIZCON, PSYCHE, and INTER have been modernized to conform to the Fortran-95 standard. The GETMAT, LISTEF, PLOTEF, and SETMDC meet the Fortran-95 standard but have not been modernized to incorporate the new features. The code system was tested by RSICC on personal computers under Windows 2000 and Linux. NNDC provided the included executables created with Digital Visual Fortran for Windows and Lahey Fortran 95 for Linux. SETMDC is a small Fortran program designed to convert a computer program source for use on different computers. Source files processed with SETMDC are included in this distribution. The package is transmitted on a CD in a self-extracting, compressed Windows file which includes the source codes, executables, documentation and test cases. Reference: Informal report, (May 20, 2002). Fortran 95; Vax, PC, Unix Workstations (P00333MNYCP04).

# 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.  **September's code focus is Nuclear Data Generation for Transport Code Input.**

| | | |
|---|---|---|
| **ABAREX** | **EMPIRE-II** | **ROLAIDS-CPM** |
| **AMPX 77** | **FEDGROUP-R** | **SAMMYM6** |
| **AXMIX-PC** | **FEDGROUPC86REV3** | **SCAMPI** |
| **BUCORST** | **GNASHF-KK** | **SCAT2B** |
| **CHENDF 6.13** | **MC**22** | **STAPRE-H95** |
| **COMBINE-PC** | **MICROX-2** | **SUPERDAN-PC** |
| **DETAN 95** | **NJOY99.0** | **TRANSX 2.15** |
| **ECIS-95** | **PRECO-2000** | **UNF** |
| **EDISTR** | **PREPRO2002** | |

# 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 are listed alphabetically following the table.

## Condensed Table of Conferences

| Name of Conference | Date and Location | Web Site | Abstract/Paper Submission Date |
|---|---|---|---|
| 9th International Conf. on Environmental Remediation and Radioactive Waste Mgmt. | Sept. 21-25, 2003 Oxford, England | **http://www.icemconf.com** | passed |

| Name of Conference | Date and Location | Web Site | Abstract/Paper Submission Date |
|---|---|---|---|
| Supercomputing in Nuclear Applications (SNA-2003) | Sept. 22-24, 2003 Paris, France | **http://sna-2003.cea.fr/** | passed |
| Advances in Nuclear Fuel Management III | Oct. 5-8, 2003 Hilton Head Island, South Carolina | **http://rpd.ans.org/nfm.htm** | passed |
| 6th International Symposium on ESR Dosimetry and Applications | Oct. 12-16, 2003 Campos do Jordão, Brazil | **http://www.if.usp.br/VI_ESR_2003/** | passed |
| 10th International Training Course/Workshop on "Methodologies for Particle Transport Simulation of Nuclear Systems" | Oct. 13-17, 2003 | **http://ufttg.nuceng.ufl.edu/workshop2003/workshop2003.html** | |
| 7th International Conference on Nuclear Criticality Safety (ICNC2003) | Oct. 20-24, 2003 Tokai-mura, Japan | **http://www.icnc.jp/** | passed |
| 9th International Symposium on Radiation Physics (ISRP-9) | Oct. 27-31, 2003 Cape Town, South Africa | **www.medrad.tlabs.ac.za/isrp9.htm** | |
| Council on Ionizing Radiation Measurements and Standards (CIRMS) | Oct. 27-29, 2003 Gaithersburg, Maryland | **http://www.cirms.org** | passed |
| 11th International Conference on Fusion Reactor Materials (ICFRM-11) | Dec. 7-12, 2003 Kyoto, Japan | **icfrm.iae.kyoto-u.ac.jp** | passed |
| PHYSOR 2004 | Apr. 25-29, 2004 Chicago, Illinois | **www.physor2004.anl.gov** | Oct. 3, 2003 |
| Current Topics in Monte Carlo Treatment Planning | May 3-5, 2004 Montreal, Canada | **http://mctp.medphys.mcgill.ca** | Nov. 1, 2003 |
| International Conference on Radiation Shielding (ICRS-10) and Topical Mtg. on Radiation Protection & Shielding (RPS 2004) | May 9-14, 2004 Funchal, Madeira Island (Portugal) | **http://www.itn.mces.pt/ICRS-RPS/** | |

| 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/** | abst: 12/15/03 paper: 9/26/04 |

## 6th International Symposium on ESR Dosimetry and Applications

The 6th International Symposium on ESR Dosimetry and Applications will be held **October 12-16, 2003**, in Campos do Jordão, Brazil.  For complete information, please see **http://www.if.usp.br/ VI_ESR_2003/** and click on "second announcement (PDF version)" on the left side of the screen.

## 7th International Conference on Nuclear Criticality Safety (ICNC2003)

The 7th International Conference on Nuclear Criticality Safety (ICNC2003) will be held **October 20-24, 2003,** in Tokai-mura, Japan. This conference has been held approximately every 4 years under the support of OECD/Nuclear Energy Agency/Nuclear Science Committee.  In the Versailles conference held in 1999, over 300 people from 25 countries participated, and more than 200 presentations were given on the recent activities in research work, industrial applications, regulatory studies, and other topics related to criticality safety. ICNC2003 will provide a good opportunity for communication among researchers, engineers, plant operators, and regulators. The Conference will consist of invited talks, contributed talks, and poster sessions. On the final day of the conference, technical tours to nuclear facilities are scheduled, and social programs are planned during the conference.  Please see the website for more information: **http://www.icnc.jp/**.

## 9th International Symposium in Radiation Physics (ISRP-9)

The 9th International Symposium on Radiation Physics (ISRP-9) will be held in Cape Town, South Africa, **October 27-31, 2003**. This triennial event is organized jointly by the International Radiation Physics Society ( IRPS ) and iThemba Laboratory for Accelerator Based Sciences ( iThemba LABS ) [formerly the National Accelerator Centre]. The Symposium is the latest in a series which began in Calcutta in 1974 and continued in Penang (1982), Ferrara (1985), São Paulo (1988), Dubrovnik (1991), Rabat (1994), Jaipur (1997) and Prague (2000). A 2½ day "Workshop on Radiation-Based Analytical Techniques" (WoRBAT) will be held prior to ISRP-9 (October 24-26, 2003)
with emphasis on x-ray fluorescence and diffraction (XRF, XRD) and particle-induced x-ray emission (PIXE).  For more information, please visit **www.medrad.tlabs.ac.za/isrp9.htm.**

## Advances in Nuclear Fuel Management III

American Nuclear Society's Advances in Nuclear Fuel Management III Topical Meeting will be held in Hilton Head Island, South Carolina, **October 5-8, 2003**. Please bookmark the conference web site: **http://rpd.ans.org/nfm.htm** and visit it occasionally for news and updates. Comments and suggestions are most welcome.

## 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.

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

The International Conference on Nuclear Data for Science and Technology will be held **September 26-October 1, 2004** in Santa Fe, New Mexico. This is an OECD-Nuclear Energy Agency Conference, which is held approximately every 3 years. Recent conferences in this series were in Antwerp (1982), Santa Fe (1985), Mito (1988), Jüelich (1991), Gatlinburg (1994), Trieste (1997) and Tsukuba (2001). This International Conference focuses on nuclear data, their production, dissemination, testing and application. The data are produced both through experiment and theoretical models; they are compiled and evaluated to form data libraries of 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**.

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.

# MCNP Courses

## 2003

| Sept. 15-19 | Introductory | Issy-les-Moulineaux, France |
|---|---|---|
| Oct. 14-17 | Intermediate/Advanced | Los Alamos, NM |

## 2004

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

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

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

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

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

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

# MCNP Visual Editor Classes

The Visual Editor is a powerful visualization tool that can be used to rapidly create complex Monte Carlo N Particle (MCNP 4C2) geometry models, including lattices, universes, fills, and other geometrical transformations. The Visual Editor can:

Display MCNP 4C2 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 classes are scheduled **September 8-12, 2003,** and **March 15-19, 2004,** in Richland, Washington. The class will focus on the use of the visual editor, with an overview of MCNP. The fifth day is optional and will focus on using the Visual Editor and MCNP to do some example problems.

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

## MCNPX Workshops

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

### 2003

| October 6-10 | Intermediate | Stuttgart, Germany |
|---|---|---|
| November 17-21 | Intermediate | Tokyo, Japan |

### 2004

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

MCNPX is the LANL all-particle, all-energy (eV-TeV) Monte Carlo transport code based on MCNP4C, LAHET, CEM, etc. MCNPX has been in active development since 1995, sponsored by the particle accelerator community. It has now become an accepted tool for a broad range of applications by nuclear engineers, physicists, and scientists. The MCNPX development effort has expanded the use of the Los Alamos tools to applications such as APT, waste transmutation, accelerator shielding and health physics, particle beam cancer therapy, space shielding and cosmic ray analysis, single event effects in semiconductors, radiography, and more detailed analysis of the effects of light and heavy ions in matter. In addition, the entire functionality of MCNP4C is retained. New variance reduction and data analysis techniques, many adapted from high energy accelerator methodologies, have also been added, such as the extensive 'mesh tally' capability which allows up to 3-d plotting of particle tracks, fluence and fluence-derived quantities, energy deposition, next event estimator generation contributions and particle sources.

The workshops include hands-on instruction, generally on PC Windows machines. Subject to participant export approval for the MCNPX beta test team, participants will be able to access the Fortran-90 version of MCNPX 2.4, the LA150 (150 MeV) cross-section data for over 40 isotopes for incident neutrons and protons, and 12 for photonuclear interactions, and a notebook of viewgraphs.
Follow-up consultation for class participants will be provided.

Classes are taught by experienced MCNPX code developers and instructors. More information on code versions and capabilities is available at MCNPX Workshops web site **http://mcnpxworkshops .com**.

## PHYSOR 2004

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

The title for the meeting is "The Physics of Fuel Cycles and Advanced Nuclear Systems: Global Developments."  The technical program will cover more than 15 topical focus areas; the deadline for submission of 1000-word summaries is October 3, 2003.  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**.

## SCALE KENO V.a Criticality Safety Course

The SCALE KENO V.a Criticality Course, **November 3-7, 2003**, will focus on KENO V.a and the associated criticality analysis sequences in CSAS. KENO V.a is a widely used 3-D multigroup Monte Carlo criticality safety code that has been in use for more that 15 years. KENO V.a is a fast, easy-to-use code that allows users to build complex geometry models using basic geometrical bodies of cuboids, spheres, cylinders, hemispheres, and hemicylinders. Two-dimensional color plots of the geometry model can be generated in KENO V.a or the model may be viewed using the KENO3D 3D visualization tool. For further information,visit **http://www.ornl.gov/scale/trcourse.html#href1** or contact Kay Lichtenwalter, **scalecoding@ornl.gov**, 865-574-9213.

## SCALE Source Terms & Shielding Course

The SCALE Shielding and Source Terms Course covers SAS2 and ORIGEN-ARP (depletion/source-term generation), SAS1/XSDRNPM (1-D neutron/gamma shielding), SAS4/MORSE-SGC (3-D Monte Carlo neutron/gamma shielding), and QADS/QAD-CGGP (3-D point kernel gamma shielding). The course will be **November 10-14, 2003**, and will feature the use of the SCALE Windows GUIs: OrigenArp for Windows, ORIGEN-S plotting utility PlotOPUS, and the ESPN shielding input processor for SAS4. For further information visit **http://www.ornl.gov/scale/ trcourse.html#href1** or contact Kay Lichtenwalter, **scalecoding@ornl.gov**, 865-574-9213.

## Short Course on "Introduction to Monte Carlo Treatment Planning"

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

The course registration fee is $1600, which covers the course materials, two lunches, two dinners and refreshments. A set of software is free for the attendee. Discount for students are available too. 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 our Monte Carlo RTP software.

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

# CALENDAR

**September 2003**

*Workshop on Nuclear Data for the Transmutation of Nuclear Waste*, Sept. 1-5, 2003, GSI-Darmstadt, Germany, Contact: Aleksandra Kelic (tel 49-0-6159-71-2727, fax 49-0-6159-71-2785, email **A.Kelic@gsi.de**, url **http://www-wnt.gsi.de/tramu**).

*Nuclear Energy for New Europe 2003*, Sept. 8-11, 2003, Portorož, Slovenia, Contact: Tomaz Zagar (phone +386-1-588-5450, fax +386-1-561-2335, email **PORT2003@ijs.si,** url **http://www.drustvo -js.si/port2003/**).

*Visual Editor for MCNP*, Sept. 8-12, 2003, Richland, Washington. Contact: Randy Schwarz (email **randyschwarz@ mcnpvised.com**, url **http://www.mcnpvised.com/train.html**).

*MCNP5 Introductory Training Course*, Sept. 15-19, 2003, Issy-les-Moulineaux, France. Organized by OECD/NEA and RSICC. Contact: Enrico Sartori (fax 33-1-45241110, email **sartori@nea.fr**, url **http://www.nea.fr/html/dbprog/ mcnpcourses2003-2.html**).

*9th International Conference on Environmental Remediation and Radioactive Waste Management*, Sept. 21-25, 2003, Oxford, England. Contact: (url **www.icemconf. com**).

*International Conference on Supercomputing in Nuclear Applications, SNA 2003*, Sept. 22-24, 2003, Paris, France. Organizers: CEA, SFANS, co-organizer: OECD/NEA. (email **SNA-2003@ cea.fr**, url **http://SNA-2003.cea.fr**).

**October 2003**

*American Nuclear Society's Advances in Nuclear Fuel Management III Topical Meeting*, Oct. 5-8, 2003, Hilton Head Island, SC. Contact: Youssef A. Shatilla (email **shatilya@westinghouse.com**, url **http://rpd.ans.org/nfm.htm**).

*MCNPX Intermediate Workshop*, Oct. 6-10, 2003, Stuttgart, Germany. Contact: Bill Hamilton (tel 505-455-0312, email **registrar@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details; register through the **NEA**).

*10th International Training Course/Workshop on Methodologies for Particle Transport Simulation of Nuclear Systems (Design, Dosimetry & Shielding)*, Oct. 13-17, 2003, Gainesville, FL. Contact: Prof. A. Haghighat (tel email **haghighat@ufl.edu**, url **http://www.nre.ufl.edu**).

*7th International Conference on Nuclear Criticality Safety (ICNC2003)*, Oct. 20-24, 2003, Contact: Dr. Yoshinori Miyoshi (tel +81-29-282-6671; fax +81-29-282-6798, email **icnc03miyoshi@nucef.tokai. jaeri.go.jp**, url **http://www.icnc.jp/**).

*Council on Ionizing Radiation Measurements and Standards*, Oct. 27-29, 2003, Gaithersburg, MD. Contact: Teresa Vicente (tel 3010-975-3883, fax 301-948-2067, **teresa.vicente@ nist.gov**, url **www.cirms.org**).

*9th Triennial International Symposium in Radiation Physics*, Oct. 27-31, 2003, Cape Town, South Africa. Contact: Dr. D. T. L. Jones (tel +27-21-843-1336, fax +27-21-843-3382, email **Jones@tlabs.ac.za** url **www.medrad. tlabs.ac.za/isrp9.htm**).

**November 2003**

*SCALE KENO V.a Criticality Safety Course*, Nov. 3-7, 2003, Oak Ridge National Laboratory. Contact: Kay Lichtenwalter (tel 865-574-9213, email **scalecoding@ornl.gov**, url **http://www.ornl.gov/scale/ trcourse.html#href1**.

*SCALE Source Terms & Shielding Course*, Nov. 10-14, 2003, Oak Ridge National Laboratory. Contact: Kay Lichtenwalter (tel 865-574-9213, email **scalecoding@ornl.gov**, url **http://www.ornl.gov/scale/ trcourse.html#href1**.

*ANS/ENS International Winter Meeting and Nuclear Technology Expo*, Nov. 16-20, 2003, New Orleans, LA. Contact: (url **http://www.ans.org/meetings/**).

*Radiation Transport Calculations Using the EGS Monte Carlo System*, Nov. 17-20, 2003,Ottawa, Canada. Contact: Blake Walters (tel 613-993-2715, fax 613-952-9865, email **bwalters@irs.phy.nrc.ca**, url **www.irs.inms.nrc.ca/inms/irs/papers/eg snrc/brochure.html**).

*MCNPX Intermediate Workshop*, Nov. 17-21, 2003, Japan. Contact: Bill Hamilton (tel 505-455-0312, email **registrar@mcnpxworkshops. com,** url **http://mcnpxworkshops.com**).

**December 2003**

*The 11th International Conference on Fusion Reactor Materials (ICFRM-11)*, Dec. 7-12, 2003, Kyoto, Japan. Contact ICFRM-11 secretariat ( tel +81-774-38-3597, fax +81-774-38-3467, email **icfrm@iae.kyoto-u.ac.jp**, url **http://icfrm.iae.kyoto-u.ac.jp).**

**January 2004**

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

**March 2004**

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

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

**April 2004**

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

**May 2004**

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

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

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

**June 2004**

*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).

*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).

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

# 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. For literature listed as available from INIS contact INIS Clearinghouse, International Atomic Energy Agency, P.O. Box 100, A-1400 Vienna.

**Ann. Nucl. Energy, 30, 1213-1229**. . . *A Practical Optimization Procedure for Radial BWR Fuel Lattice Design Using Tabu Search with A Multiobjective Function.* . . .Francois, J.L. et al. . . . August 2003. . . Univ. Nacl. Autonoma Mexico, Morelos, Mexico; Ctr. Univ. Anglo Mexicano, Morelos, Mexico.

**Ann. Nucl. Energy, 30, 1231-1246**. . . *The Evaluation of Radioactive Corrosion Product at PWR as Change of Primary Coolant Chemistry for Long-Term Fuel Cycle.* . . .Song, M.C. et al. . . August 2003. . . Korea Adv. Inst. Science & Technology, Taejon, South Korea.

**Ann. Nucl. Energy, 30, 1247-1266**. . . *Sensitivity Analysis of the Aerosols Transport Equation.* . . .Gimenez, M.O. et al. . . . August 2003. . . Ctr. Atomic Bariloche, Rio Negro, Argentina.

**Ann. Nucl. Energy, 30, 1267-1281**. . . *Space-Dependency Analysis of Amplitude and Decay Ratio Based on Forsmark Noise Data: New Approach to Contraction of Space-Dependent Information on Reactor Stability.* . . .Watanabe, F. et al. . . . August 2003. . . TEPCO System Corp., Tokyo, Japan; University of Tsukuba, Ibaraki, Japan.

**Ann. Nucl. Energy, 30, 1283-1295**. . . *Time-Dependent Neutron Transport in a Semi-Infinite Random Medium.* . . .El-Wakil, S.A. et al. . . . August 2003. . . Univ. Mansoura, Mansoura, Egypt.

**Ann. Nucl. Energy, 30, 1297-1308**. . . *Optimal Design of HYPER Target System Based on the Thermal and Structural Analysis of Pb-Bi Spallation Target and Beam Window.* . . .Song, T.Y. et al. . . . August 2003. . . KAERI, Taejon, South Korea.

**Ann. Nucl. Energy, 30, 1309-1331**. . . *Modeling Strategy of the Source and Sink Terms in the Two-Group Interfacial Area Transport Equation.* . . .Ishii, M. et al. . . . September 2003. . . Purdue Univ., W. Lafayette, Indiana.

**Ann. Nucl. Energy, 30, 1333-1345**. . . *An Application of the Wiener-Hopf Method to the One-Speed Flat-Flux Problem in a Half-Space.* . . .Cassell, J.S. et al. . . . September 2003. . . Univ. London Imperial College, London, England; London Metropolitan Univ., London, England.

**Ann. Nucl. Energy, 30, 1347-1364**. . . *Discontinuity Factors for Non-Multiplying Material in Two-Dimensional Hexagonal Reactor.* . . .Mittag, S. et al. . . . September 2003. . . Forschungszentrum Rossendorf, Dresden, Germany; INRNE, Sofia, Bulgaria.

**Ann. Nucl. Energy, 30, 1365-1381**. . . *A Neural Model for Transient Identification in Dynamic Processes with "Don't Know" Response.* . . .Mol, A.C.D. et al. . . . September 2003. . . CNEN, Rio de Janeiro, Brazil.

**Ann. Nucl. Energy, 30, 1391-1400**. . . *On the Properties of the Chord Length Distribution, from Integral Geometry to Reactor Physics.* . . .Mazzolo, A. et al. . . . September 2003. . . CEA, Gif-sur-Yvette, France.

**Ann. Nucl. Energy, 30, 1401-1408**. . . *The Power Law Character of Off-Site Power Failures. .*

. .Arul, A.J. et al. . . . September 2003. . . Indira Gandhi Ctr. Atom. Research, Tamil Nadu, India; AERB, Tamil Nadu, India.

**Ann. Nucl. Energy, 30, 1409-1424**. . . *Study on Neutronics Design of Accelerator Driven Subcritical Reactor as Future Neutron Source, Part 1: Static Characteristics.* . . .Yamamoto, A. et al.. . . September 2003. . . Kyoto Univ., Osaka, Japan; Nucl. Fuel Ind. Ltd., Osaka, Japan.

**Ann. Nucl. Energy, 30, 1425-1435**. . . *Study on Neutronics Design of Accelerator Driven Subcritical Reactor as Future Neutron Source, Part 2: Kinetic Characteristics.* . . .Yamamoto, A. et al. . . . September 2003. . . Kyoto University, Osaka, Japan.

**Ann. Nucl. Energy, 30, 1437-1456**. . . *Model Parameters Estimation and Sensitivity by Genetic Algorithms.* . . .Marseguerra, M. et al. . . . September 2003. . . Politec. Milan, Milan, Italy.

**Ann. Nucl. Energy, 30, 1457-1471**. . . *Influence of Predictive Contamination to Agricultural Products Due to Dry and Wet Processes During an Accidental Release of Radionuclides.* . . .Hwang, W.T. et al. . . . September 2003. . . KAERI, Taejon, South Korea.

**Ann. Nucl. Energy, 30, 1473-1485**. . . *The Dynamic Analysis of Nuclear Waste Cask Under Impact Loading.* . . .Teng, T.L. et al. . . . September 2003. . . Chung Shan Inst. Sci. & Technol., Tao Yuan, Taiwan; Natl. Def. Univ. Chung Cheng, Yao Yuan, Taiwan.

**Ann. Nucl. Energy, 30, 1487-1494**. . . *The Preliminary 3D Dynamic Simulation on the RSR Dismantling Process of the KRR-1&2.* . . .Kim. H.R. et al. . . . September 2003. . . KAERI, Taejon, South Korea.

**Nucl. Sci. Eng., 144, 191-199**. . . *Criticality and Reactivity Measurement Method for Nuclear Material Control and Accountability.* . .Ponomarev-Stepnoi, N.N. et al. . . . July 2003. . . Kurchatov Institute, Moscow, Russia; Los Alamos National Los Alamos, New Mexico.

**Nucl. Sci. Eng., 144, 200-210**. . . *A Numerical Method for Computing Collision, Escape, and Transmission Probabilities in Three Dimensions.* . . .Garcia, R.D.M. . . . July 2003. . . HSH Scientific Computing, Sao Jose, Brazil.

**Nucl. Sci. Eng., 144, 211-218**. . . *Effects of Nuclear Data Library on BFS and ZPPR keff Analysis Results.* . . .Manturov, G. . . . July 2003. . . O-arai Engineering Center, Ibaraki, Japan.

**Nucl. Sci. Eng., 144, 219-226**. . . *The Fragment Distribution of Nb, Au, and Pb from Proton-Induced Reactions with Energies Ranging from 100 MeV to 3 GeV.* . . .Fan. S et al. . . . July 2003. . . China Institute of Atomic Energy, Beijing, China; Northwest University, Xi'an, China.

**Nucl. Sci. Eng., 144, 227-241**. . . *Characterization of a Source Importance Function.* . . .Kim, Y. et al. . . . July 2003. . . KAERI, Daejeon, Korea.

**Nucl. Sci. Eng., 144, 242-257**. . . *An Investigation of Power Stabilization and Space-Dependent Dynamics of a Nuclear Fluidized-Bed Reactor.* . . .Pain, C.C. et al. . . . July 2003. . . Imperial College of Science, London, UK; Delft University of Technology, JB Delft, Netherlands.

**Nucl. Technol., 143, 1-10**. . . *Safety System Design Concept and Performance Evaluation for a Long Operating Cycle Simplified Boiling Water Reactor..* . .Arai, K. et al. . . . July 2003. . . Toshiba Corp., Kawasaki & Yokohama, Japan.

**Nucl. Technol., 143, 11-21**. . . *Rapid-L Operator-Free Fast Reactor Concept Without Any Control Rods..* . .Kambe, M. et al.. . . July 2003. . . Central Research Inst. of Electric Power Industry, Tokyo, Japan; Mitsubishi Research Inst., Inc., Tokyo, Japan; JAERI, Ibaraki-ken, Japan.

**Nucl. Technol., 143, 22-36**. . . *Performance of Thorium-Based Mixed-Oxide Fuels for the Consumption of Plutonium in Current and Advanced Reactors.* . . .Weaver, K.D. et al. . . . July 2003. . . INEEL, Idaho Falls, Idaho.

**Nucl. Technol., 143, 37-56**. . . *Coolant Mixing in a Pressurized Water Reactor: Deboration Transients, Steam-Line Breaks, and Emergency Core Cooling Injection.* . . .Prasser, H-M. et al.. . . July 2003. . . Forschungszentrum Rossendorf, Dresden, Germany.

**Nucl. Technol., 143, 57-64**. . . *Multidimensional Mixing Behavior of Steam-Water Flow in a Downcomer Annulus During LBLOCA Reflood Phase with a Direct Vessel Injection Mode..* .Kwon, T-S. et al. . . . July 2003. . . KAERI, Daejeon, Korea.

**Nucl. Technol., 143, 65-76**. . . *Experimental Study on the Performance of the Passive Safety Injection in an IIST.* . . .Chang, C-J. et al.  . . . July 2003. . . Inst. of Nuclear Energy Research, Lung-Tan, Taiwan; Gengood Engineering Corp., Taipei, Taiwan; Taiwan Power Co., Taipei County, Taiwan.

**Nucl. Technol., 143, 77-88**. . . *Stability of Natural - Circulation-Cooled Boiling Water*

*Reactors During Startup: Experimental Results.* . . .Manera, A. et al. . . . July 2003. . . Delft University of Technology, Delft, The Netherlands.

**Nucl. Technol., 143, 89-100**. . . *Critical Power Correlation for Axially Uniformly Heating Tight-Lattice Bundles.* . . .Kureta, M. et al. . . . July 2003. . . JAERI, Ibaraki, Japan.

**Prog. Nucl. Energy, 43, 5-25** . . . *Neutron Noise and Random Trees - Links Between Past and Present.*. . .Pal, L. . . . July 2003. . . no installation listed.

**Prog. Nucl. Energy, 43, 27-34**. . . *Application of Advanced Core Process Monitoring Procedures in German Power Reactors.*. . .Pohlus, J. . . . July 2003. . . Inst. Sicherheitstechnol., Garching, Germany.

**Prog. Nucl. Energy, 43, 35-41**. . . *Development and Application of Core Diagnostics and Monitoring for the Ringhals PWRS.* . . .Andersson, T. et al.. . . July 2003. . . Ringhals, Varobacka, Sweden; Chalmers Univ., Gothenburg, Sweden; Swedish Nucl. Power Instectorate, Stockholm, Sweden.

**Prog. Nucl. Energy, 43, 43-49**. . . *Development of Advanced Core Noise Monitoring System for BWRs.* . . .Mori, M. et al. . . . July 2003. . . Tokyo Elect. Power Co., Tokyo, Japan; Toshiba Co., Kanagawa, Japan; Aitel Corp., Kanagawa, Japan.

**Prog. Nucl. Energy, 43, 51-56**. . . *Application of Global Optimization to VVER-1000 Reactor Diagnostics.*. . .Kinelev, V.G. et al.. . July 2003. . . Bauman Moscow State Tech. Univ., Moscow, Russia.

**Prog. Nucl. Energy, 43, 57-66**. . . *Analysis of an MTC Noise Measurement Performed in Ringhals-2 Using Gamma-Thermometers and In-Core Neutron Detectors.*. . .Demaziere, C. et al.. . July 2003. . . Chalmers Univ., Gothenburg, Sweden; Ringhals, Varobacka, Sweden.

**Prog. Nucl. Energy, 43, 67-74**. . . *Regular Neutron Noise Diagnostics Measurements at the Hungarian Paks NPP.* . . .Czibok, T. et al. . . . July

2003. . . KFKI Atomic Energy Resh. Inst., Budapest, Hungary; Paks Nucl. Power Plant, Paks, Hungary.

**Prog. Nucl. Energy, 43, 75-82**. . . *Reactor Noise Measurements in the Safety and Regulating Systems of CANDU Stations.* . . .Glockler, O.. . July 2003. . . Ontario Power, Toronto, Canada.

**Prog. Nucl. Energy, 43, 83-89**. . . *On-Line Monitoring of Instrument Channel Performance in Nuclear Power Plant Using PEANO.*. . .Fantoni, P.F. et al.. . July 2003. . . Inst. Energiteknikk., Halden, Norway; EPRI, Charlotte, NC; Edan Eng. Corp., Vancouver, WA.

**Prog. Nucl. Energy, 43, 91-96**. . . *Testing the Dynamics of Shutdown Systems Instrumentation in Reactor Trip Measurements.* . . .Glockler, O. . . . July 2003. . . Ontario Power, Toronto, Canada.

**Prog. Nucl. Energy, 43, 97-104**. . . *Data Reconciliation and Fault Detection by Means of Plant-Wide Mass and Energy Balances.* . . .Sunde, S. et al.. . July 2003. . . Inst. Energy Technology, Halden, Norway.

**Prog. Nucl. Energy, 43, 105-111**. . . *Goal-Oriented Flexible Sensing for Higher Diagnostic Performance of Nuclear Plant Instrumentation.* . . .Takahashi, M. et al.. . July 2003. . . Tohoku Univ., Miyagi, Japan.

**Prog. Nucl. Energy, 43, 113-120**. . . *Multi-Agent-Based Anticipatory Control for Enhancing the Safety and Performance of Generation-IV Nuclear Power Plants During Long-Term Semi-Autonomous Operation.* . . .Uhrig, R.E. et al. . . . July 2003. . . Univ. Tennessee, Knoxville, Tennessee; Purdue, Univ., W. Lafayette, Indiana.

**Prog. Nucl. Energy, 43, 121-128**. . . *Water Level in Boiling Water Reactors - Measurement, Modelling, Diagnostic.* . . .Hampel, R. et al. . . . July 2003. . . Univ. Appl. Sci. Zittau Gorlitz, Zittau, Germany.

**Prog. Nucl. Energy, 43, 129-136**. . . *Condition Telemonitoring and Diagnosis of Power Plants Using Web Technology.*. . .Kunze, U. . . . July 2003. . . Siemens AG, Erlangen, Germany.

**Prog. Nucl. Energy, 43, 137-143**. . . *Real Time Reactor Noise Diagnostics for the Borssele (PWR) Nuclear Power Plant.* . . .Barutcu, B. et al. . . . July 2003. . . Istanbul Tech. Univ., Istanbul, Turkey.

**Prog. Nucl. Energy, 43, 145-150**. . . *Predicting of Slow Noise and Vibration Spectra Degradation in the IBR-2 Pulsed Neutron Source Using a Neural Network Simulator.* . . .Dzwinel, W. et al. . . . July 2003. . . AGH Inst. Comp. Sci., Krakow, Poland; Joint Inst., Moscow, Russia; SWEA Univ., Kielce, Poland.

**Prog. Nucl. Energy, 43, 151-158**. . . *Diagnostics of Core Barrel Vibrations by in-Core and Ex-Core Neutron Noise.* . . .Arzhanov, V. et al. . . . July 2003. . . Chalmers Univ., Gothenburg, Sweden.

**Prog. Nucl. Energy, 43, 159-165**. . . *Lessons Learned with Vibration Monitoring Systems in German Nuclear Power Plants.* . . .

.Kolbasseff, A. et al. . . . July 2003. . . Inst. Sicherheitstechnol., Garching, Germany.

**Prog. Nucl. Energy, 43, 167-175**. . . *Lesson Learnt from Mathematical Modelling of Primary Circuit of VVER 440/213 Reactors.* . . .Pecinka, L. et al. . . . July 2003. . . Nucl. Resh. Inst. Rez, Czech Republic; Univ. W. Bohemia, Czech Republic; CEZ JE Dukovany, Czech Republic.

**Prog. Nucl. Energy, 43, 177-186**. . . *Identification of Reactor Internals' Vibration Modes of a Korean Standard JPWR Using Structural Modelling and Neutron Noise Analysis.* . . .Park, J. et al. . . . July 2003. . . KAERI, Taejon, South Korea; KEPRI, Taejon, South Korea; Hanyang Womens College, Seoul, South Korea; Inha Univ., Inchon, South Korea.

**Prog. Nucl. Energy, 43, 187-194**. . . *Time Dependence of Linear Stability Parameters of a BWR.* . . .Navarro-Esbri, J. et al.. . . July 2003. . . Jaume I. Univ., Castellon, Spain; Univ. Polite. Valencia, Spain.

**Prog. Nucl. Energy, 43, 195-200**. . . *The Laguna Verde BWR/5 Instability Event. Some Lessons Learnt.* . . .Blazquez, J. et al. . . . July 2003. . . CIEMAT, Madrid, Spain; ININ, Ocoyoacac, Mexico.

**Prog. Nucl. Energy, 43, 201-207**. . . *Theory of Stochastic Bifurcation in BWRs and Applications.* . . .Konno, H. et al.. . . July 2003. . . Univ. Tsukuba, Ibaraki, Japan; Toshiba Co., Kanagawa, Japan.

**Prog. Nucl. Energy, 43, 209-216**. . . *A Systematic Method to Identify Nonlinear Dynamics of BWR by Using the Reactor Noise.* . . .Liu, W.F. et al.. . . July 2003. . . Tsing Hua Univ., Beijing, China.

**Prog. Nucl. Energy, 43, 217-223**. . . *Application of a Nonlinear Dynamical Descriptor to BWR Stability Analyses.* . . .Suzudo, T. . . . July 2003. . . JAERI, Ibaraki, Japan.

**Prog. Nucl. Energy, 43, 225-232**. . . *Experience with Identification of Loose Parts by Acoustic Monitoring of Primary System.* . . .Olma, B.J. . . . July 2003. . . ISTec., Garching, Germany.

**Prog. Nucl. Energy, 43, 233-242**. . . *Development of Integrated Automatic Diagnosis Method for Loose Parts Monitoring System.* . . .Kim, J.S. et al.. . . July 2003. . . KAERI, Taejon, South Korea; Chunghnam Natl. Univ., Taejon, South Korea.

**Prog. Nucl. Energy, 43, 243-251**. . . *Development of a False Alarm Free, Advanced Loose Parts Monitoring System (ALPS).* . . .Por, G. et al. . . . July 2003. . . Budapest Univ., Hungary; Paks Nucl. Power Plant, Paks, Hungary; APandSD Ltd., Budapest, Hungary.

**Prog. Nucl. Energy, 43, 253-260**. . . *The Experimental Investigation of the Impact of a Particle or a Rigid Body on a Cylindrical Shell.* . . .Dubinin, V.V. et al.. . . July 2003. . . Bauman Moscow State Tech. Univ., Moscow, Russia.

**Prog. Nucl. Energy, 43, 261-266**. . . *A Study on Technique to Estimate Impact Location of Loose Part Using Wigner-Ville Distribution.* . . .Kim, Y.B. et al.. . . July 2003. . . Korea Inst. Nucl. Safety, Taejon, South Korea; KAERI, Taejon, South Korea.

**Prog. Nucl. Energy, 43, 267-274**. . . *Integrating Cross-Correlation Techniques and Neural Networks for Feedwater Flow Measurement.* . . .Ruan, D. et al. . . . July 2003. . . OECD, Halden, Norway; Tecnatom SA, Madrid, Spain; CEN SCK, Mol, Belgium.

**Prog. Nucl. Energy, 43, 275-280**. . . *Semi-Physical Identification of Dynamic Properties in a Thermohydraulic Channel.* . . .Rotander, C.. . . July 2003. . . Westinghouse Atom., Vasteras, Sweden.

**Prog. Nucl. Energy, 43, 281-288**. . . *Measurement of the Coolant Flow Rate Using Correlation of Temperature Fluctuations.* . . .Por, G. et al. . . . July 2003. . . Budapest Univ., Hungary

**Prog. Nucl. Energy, 43, 289-296**. . . *Flow Measurements by Noise Analysis of Thermocouple Signals from the BOCA Experiment at the Studsvik R2 Reactor.* . . .Karlsson, J.K.H. et al. . . . July 2003. . . Studsvik Nucl AB, Nykoping, Sweden; GSE Power, Nykoping, Sweden.

**Prog. Nucl. Energy, 43, 297-303**. . . *Identification of Transfer Functions and Statistical Inverse Problems.* . . .Kishida, K. . . . July 2003. . . Gifu Univ., Gifu, Japan.

**Prog. Nucl. Energy, 43, 305-311**. . . *Use of the MCNP-PoliMi Code for Time-Correlation Safeguards Measurements.* . . .Marseguerra, M. et al. . . . July 2003. . . Politech Milan, Italy.

**Prog. Nucl. Energy, 43, 313-319**. . . *Study of the MTC Estimation by Noise Analysis in 2-D Heterogeneous Systems.* . . .Demaziere, C. et al.. . . July 2003. . . Chalmers Univ., Gothenburg, Sweden.

**Prog. Nucl. Energy, 43, 321-327**. . . *Assessment of Linear and Non-Linear Autoregressive Methods for BWR Stability Monitoring.* . . .Manera, A. et al. . . . July 2003. . . Delft Univ., JB Delft, The Netherlands.

**Prog. Nucl. Energy, 43, 329-336**. . . *Analysis of Pressure Signals Using a Singular System Analysis (SSA) Methodology.* . . .Palomo,

M.J. et al. . . . July 2003. . . Univ. Polite., Valencia, Spain.

**Prog. Nucl. Energy, 43, 337-342**. . . *Fault Monitoring of Nuclear Power Plant Sensors and Field Devices.* . . .Upadhyaya, B.R. et al. . . . July 2003. . . Univ. Tennessee, Knoxville, Tennessee.

**Prog. Nucl. Energy, 43, 343-348**. . . *Experiences from Sensor Tests and Evaluation of Sensor Performance.* . . .Bergdahl, B.J. et al. . . . July 2003. . . GSE Power, Nykoping, Sweden.

**Prog. Nucl. Energy, 43, 349-355**. . . *Development of New Sub-Miniature Fission Chambers; Modeling and Experimental Tests.* . . .Blandin, C. et al. . . . July 2003. . . CEA Cadarache, St. Paul Les Durance, France; CEN SCK, Mol, Belgium.

**Prog. Nucl. Energy, 43, 357-364**. . . *Development of Microphone Leak Detection Technology on Fugen NPP.* . . .Shimanskiy, S. et al. . . . July 2003. . . Japan Nucl. Cycle Dev. Inst., Fukui, Japan.

**Prog. Nucl. Energy, 43, 365-372**. . . *Power Density Axial Oscillations Induced by Xenon Dynamics: Parameter Identification via Genetic Algorithms.* . . .Marseguerra, M. et al. . . . July 2003. . . Polite. Milan, Italy.

**Prog. Nucl. Energy, 43, 373-380**. . . *Fuzzy Logic for Signal Prediction in Nuclear Systems.* . . .Marseguerra, M. et al. . . . July 2003. . . Politec., Milan, Italy.

**Prog. Nucl. Energy, 43, 381-387**. . . *Comparisons Between the Various Types of Neural Networks with the Data of Wide Range Operational Conditions of the Borssele NPP.* . . .Ayaz, E. et al. . . . July 2003. . . Istanbul Tech. Univ., Turkey.

**Prog. Nucl. Energy, 43, 389-395**. . . *The Attractor Dimension Determination Applied to Monitoring and Surveillance in Nuclear Power Plants.* . . .Otero, M. et al.. . . July 2003. . . Higher Inst. Nucl. Sci. & Technol., Havana, Cuba; Pharm. & Food Inst., Havana, Cuba.

**Prog. Nucl. Energy, 43, 397-404**. . . *On-Line Neuro-Expert Monitoring System for Borssele Nuclear Power Plant.* . .Nabeshima, K. et al.. . . July 2003. . . JAERI, Ibaraki, Japan; Istanbul Tech. Univ., Turkey; Kyushu Univ., Fukuoka, Japan.

**Prog. Nucl. Energy, 43, 405-411**. . . *Software Integration for Monitoring Systems with High Flexibility.* . . .Suzudo, T. et al. . . . July 2003. . . JAERI, Ibaraki, Japan.

**Prog. Nucl. Energy, 43, 413-419**. . . *Reactivity Monitoring in ADS, Application the MYRRHA ADS Project.* . . .Baeten, P. et al. . . . July 2003. . . CEN SCK, Mol, Belgium.

**Prog. Nucl. Energy, 43, 421-428**. . . *Preliminary Measurements of the Prompt Neutron Decay Constant in MASURCA.* . . .Rugama, Y. et al. . . . July 2003. . . Delft Univ., JB Delft, The Netherlands.

**Prog. Nucl. Energy, 43, 429-436**. . . *Analytical Solution for the Feynman-Alpha Formula for ADS with Pulsed Neutron Sources.* . . .Ceder, M. et al.. . . July 2003. . . Chalmers Univ. Gothenburg, Sweden.

**Prog. Nucl. Energy, 43, 437-443**. . . *Dynamics Modeling and Stability Analysis of a Fluidized Bed Nuclear Reactor.* . .Lathouwers, D. et al. . . . July 2003. . . Delft Univ., JB Delft, The Netherlands; Univ. London Imperial College Sci. Technol. & Med., London, England.

**Prog. Nucl. Energy, 43, 445-452**. . . *Stochastic Techniques for the Control and Surveillance of a Modular Pebble Bed Reactor.* . . .Kemeny, L.G.. . . July 2003. . . Australian Member Int. Nucl. Energy Academy, Lithgow, Australia.

**KEK Proceedings 2002-17**. . . *3rd Workshop on Higher Luminosity B Factories.* . . .Yamauchi, M. ed. . . . January 2003. . . High Energy Accelerator Research Organization, Ibaraki-ken, Japan.