

# RSIC Newsletter

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**Oak Ridge National Laboratory**

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*Free and fair discussion will ever be found the firmest friend to truth.—G. Campbell*

## **CHANGE TO COMPUTER CODE COLLECTION**

One exiting code package was extended with an additional hardware version.

### **CCC-289/SKYSHINE-III**

J. K. Warkentin of Fort Worth, Texas, contributed a new hardware version of this Monte Carlo code system to calculate the effects of structure design on neutron, primary gamma-ray, and secondary gamma-ray dose rates in air. The new version runs on IBM PC compatible 286/386 computers, equipped with a math coprocessor. The executable included in the package was created with the IBM Fortran/2 compiler, Version 1.02. Code capability is unchanged from the mainframe in this new version, designated SKYIII PC. The PC version is available on two DS/HD 5.25-inch (1.2 MB) diskettes. References: RRA-T8209A (Sept. 1988) and informal notes (December 1991). Fortran 77; VAX (A) and PC 286/386 (B).

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## **Visitors to RSIC**

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *A. Hogenbirk*, The Netherlands Energy Research Foundation, Petten; *Frej Wasastjerna*, Technical Research Centre of Finland, Espoo; *Hans Brockmann*, Forschungszentrum Jülich, Germany; *Shao-hui CAI*, Inst. of Applied Physics & Computational Mathematics, Beijing; *David Little*, Westinghouse Electric, Madison, Pennsylvania; and *Kenneth Lewis*, Martin Marietta Energy Systems, Inc. at Los Alamos National Laboratory, New Mexico.

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## CONFERENCES, COURSES, SYMPOSIA

RSIC 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 to RSIC.

### **New Horizons in Radiation Protection and Shielding**

The program is in place for the April 26! May 1 ANS Topical Meeting titled "New Horizons in Radiation Protection and Shielding." The meeting is being held in Pasco, Washington, at an especially pleasant time of year. The five plenary speakers who will kick off the meeting Monday morning will present papers that display a full spectrum of the radiation protection and shielding field. They are:

- ! **Beyond the Horizon in Radiation Shielding: A Stochastic World?** *Dr. J. Butler, Winfrith*
- ! **The Horizon for Advanced Reactor Shielding Technology: Sunrise or Sunset?**  
*Dr. D. Ingersoll, ORNL*
- ! **Biomarkers and Their Potential Use in Radiation Protection,** *Dr. J. Johnson, PNL*
- ! **Instrumentation for a Secure Nuclear Future,** *Dr. A. Lucas, Victoreen*
- ! **New Quantities for Use in Radiation Protection,** *Dr. C. Meinhold, NCRP*

Two continuing education courses will be offered: "Current Issues in Radiation Protection Regulations," and "Skin Dosimetry." Application has been made to the ABHP to obtain certification credit for those who attend. If you have not sent in your registration form, the deadline is **March 20**. Contact: J. David Watrous, ANS Shielding Topical, Westinghouse Hanford Co., P.O. Box 1970, Mail Stop L5-60, Richland, WA 99352 USA (phone 509-376-8124).

### **Subsurface Flow and contaminant Transport Course Offered**

The College of Engineering continuing education service at Penn State is offering "Simulation of Subsurface Flow and Contaminant Transport by Finite Element and Analytical Methods," May 11! 15, 1992, in University Park, Pennsylvania.

The course is designed for civil engineers, environmental engineers, agricultural engineers and others who manage groundwater resources, with emphasis on the quantity aspects, and in the control, prevention, mitigation, and cleanup of groundwater contamination. The course presents an overview of conceptual, mathematical, and numerical modeling of groundwater flow and contaminant transport in both saturated and unsaturated zones and teaches powerful analytical and finite element codes for solving these problems. Emphasis will be on the adaptation of the FEMWATER-LEWASTE series of finite element codes and various analytical models to simulate groundwater flow and contaminant transport related to such cases as contamination from landfill leaches, industrial wastes, disposed hazardous and nuclear wastes. Modeling associated with water resources planning and environmental assessment will also be discussed. The goal is to familiarize participants with the methods discussed and computer codes provided in order to apply them to their own problems. The LEWASTE series, a new generation of transport codes using the Lagrangian-Eulerian approach, will be introduced during the course. This new

generation of codes can be applied to Peclet number ranging from 0 to infinity without numerical oscillations and with very little numerical dispersion.

An advance reservation form and detailed information may be obtained from Barbara Impellitteri, The Pennsylvania State University, 410 Keller Conference Center, University Park, PA 16802-1304 (Fax 814-865-3749).

## Calendar

Your attention is directed to the following events of interest.

### April 1992

*28th Annual Meeting of the National Council on Radiation Protection and Measurements*, Apr. 1! 2, 1992, Washington, D.C. Contact: NCRP, 7910 Woodmont Ave., Suite 800, Bethesda, MD 20814 (phone 301-657-2652).

*1992 ANS Regional Student Conference*, Apr. 2! 4, Albuquerque, N. M., sponsored by the ANS University of New Mexico Student Branch. Contact: Chuck Harmon, Conference Chair, University of New Mexico, Nucl. Engg. Dept., Albuquerque, NM 87131 (phone 505-292-4304).

*1992 ANS Regional Student Conference*, Apr. 2! 5, Atlanta, sponsored by the ANS Georgia Institute of Technology Student Branch. Contact Keenan C. Klos, Conference Chair, Georgia Inst. of Technology, Nucl. Engg. Dept., Atlanta, GA 30332 (phone 615-576-7430).

*1992 ANS Regional Student Conference*, Apr. 3! 5, Ann Arbor, Michigan, sponsored by the ANS University of Michigan Student Branch. Contact: Alice Arendt, Conference Chair, University of Michigan, Nucl. Engg. Dept., 235 Cooley Bldg./North Campus, Ann Arbor, MI 48109-2104 (phone 313-936-0123).

*Applied Ground-Water Modeling*, Apr. 20! 24, 1992, Golden, Colorado. Contact: Paul K.M. van der Heijde, International Ground Water Modeling Center, Colorado School of Mines, Golden, CO 80401-1887 (phone 303-273-3103, Fax 303-273-3278).

*Basic Radiation Safety & Management*, Apr. 23! 24, 1992, Chicago, Illinois, a seminar presented by Stan A. Huber Consultants, Inc.

Contact: Stan A. Huber Consultants, Inc., 200 N. Cedar Road, New Lenox, IL 60451 (phone 815-485-6161; Fax 815-485-4433).

*New Horizons in Radiation Protection and Shielding*, Apr. 26! May 1, 1992, Pasco, Washington, a topical meeting of the ANS Radiation Protection and Shielding Division. Contact: Wilbur Bunch, HO-36, Westinghouse Hanford Co., P.O. Box 1970, Richland, WA 99352 (phone 509-376-6313).

### May 1992

*4th World Conference on Neutron Radiography*, May 11! 14, 1992, San Francisco. Contact: Lolita Cox, Technical Secretary, WCNR-4, P.O. Box 1217, North Highlands, CA 95660 (phone 916-922-9263)

*Radiation Protection Instrumentation*, May 11! 15, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

*8th International Radiation Protection Association Conference*, May 17! 22, 1992, Montreal, Canada. Contact: G. Webb, NRPB, IRPA 8 Secretariat, Chilton, Didcot, Oxon OX11 0RQ, United Kingdom.

*Meeting on Radiation Safety in Uranium Mining*, May 25! 29, 1992, Saskatoon, Sask., Canada. Contact: L. D. Brown, Canada phone 306-787-4486.

*International Symposium on Numerical Transport Theory*, May 26! 28, 1992, in Moscow.

Contact: Prof. T. A. Germogenova, The Keldysh Institute of Applied Mathematics, USSR Ac. of Sci., Miusskaya Sq. 4, Moscow A-47, 125047, USSR (Fax 095-972-0737). Participants from the U.S. may contact Prof. Paul Nelson, Dept. of Nuclear Engg., Texas A&M University, College Station, TX 77843-3133 (Fax 409-845-6443).

### June 1992

*32nd Annual International Conference of the Canadian Nuclear Association and the 13th Annual Conference of the Canadian Nuclear Society*, June 7! 10, 1992, Saint John, New Brunswick. Contact CNA/CNS, 144 Front St. W, Suite 725, Toronto, Ont., Canada M5J 2L7 (phone 416-977-7620).

*American Nuclear Society Annual Meeting*, June 7! 11, 1992, Boston, Massachusetts. Contact: Mary Keenan, ANS, 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 708-352-6611).

*10th Topical Meeting on Technology of Fusion Energy*, June 7! 11, 1992, Boston, Massachusetts, sponsored by the American Nuclear Society and the U.S. Department of Energy. Contact: Stephen O. Dean, Fusion Power Associates, 2 Professional Drive, Suite 248, Gaithersburg, MD 20879 (phone 301-258-0545).

*Embedded Topical Meeting on Risk Management—Expanding Horizons*, Boston, June 8! 10, 1992, sponsored by several ANS division and other organizations. Contact: Technical Program Chair Ronald A. Knief, ERCE, P.O. Box 7010, Mechanicsburg, PA 17055-7010 (phone 717-691-1141) or ANS Meeting Dept. 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 708-579-8258).

*Environmental Radiation Surveillance*, June 8! 12, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax

617-432-1969).

*In-Place Filter Testing Workshop*, June 8! 12, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

*Planning for Nuclear Emergencies*, June 15! 19, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

### July 1992

*1992 Nuclear and Space Radiation Effects Conference*, July 13! 17, in New Orleans. Contact: Nelson S. Saks, NSREC Technical Program Chairman, Naval Research Laboratory, Code 6813, 4555 Overlook Ave., Washington, DC 20375-5000 (phone 202-767-2534, Fax 202-767-0546).

*Management and Disposal of Radioactive Wastes*, July 13! 17, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

*Techniques in Nuclear Radiation Shield Analysis*, July 13! 17, 1992, a course sponsored by the University of Texas at Austin. Contact: Continuing Engineering Studies, The University of Texas at Austin, College of Engineering, ECJ 10.324, Austin, TX 78712 (phone 512-471-3506, Fax 512-471-0831).

*15th International Conference on High Energy Accelerators*, July 20! 24, 1992, Hamburg, Fed. Rep. of Germany. Contact: F. Willeke, Deutsches Elektronen-Synchrotron, Notkestrasse 85, 2000 Hamburg 52, FRG.

*Advanced Workshop on Nuclear Emergency Planning*, July 20! 24, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

### August 1992

*SLOPOS5, 5th International Workshop on Slow-Positron Beam Techniques for Solids & Surfaces*, Aug. 6! 10, 1992, Jackson Hole, Wyoming, USA. Contact: Eric H. Ottewitte, Idaho National Engineering Laboratory, P.O. Box 1625, Idaho Falls, ID 83415-2114 USA (phone 208-526-1751; Fax 208-526-9267).

*Basic Radiation Safety & Management*, Aug. 13! 14, 1992, Newport Beach, California, a seminar presented by Stan A. Huber Consultants, Inc. Contact: Stan A. Huber Consultants, Inc., 200 N. Cedar Road, New Lenox, IL 60451 (phone 815-485-6161; Fax 815-485-4433).

*Nuclear Technologies for Space Exploration*, Aug. 16! 19, 1992, Jackson Hole, Wyoming. Contact: Dr. David Woodall, INEL EG&G Idaho, P.O. Box 1625, Idaho Falls, ID 83415-2516.

*Occupational and Environmental Radiation Protection*, Aug. 17! 21, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

*Spectrum 91: ANS Topical Meeting on Nuclear and Hazardous Waste Management*, Aug. 23! 17, 1992, Boise, Idaho. Contact: Technical Program Chair Dieter Knecht, WINCO, P.O. Box 4000, MS-5213, Idaho Falls, ID 83403 (phone 208-526-3627).

### September 1992

*IRRMA '92, 2d Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications*, Sept. 8! 11, 1992, Raleigh, North Carolina. Contact: William F. Troxler, Troxler Electronic Laboratories, Inc., P.O. Box 12057, Research Triangle Park, NC 27709 (phone 919-549-8661).

*Hazardous and Radioactive Waste Management (Spectrum 92)*, Sept. 13! 17, 1992, sponsored by the ANS and the U.S. Dept. of Energy. Contact: Dr. Clyde W. Frank, EM-50/6B-158, U.S. Dept. of Energy, 1000 Independence Ave., SW., Washington, DC 20585 (phone 202-586-6382)

*8th International Meeting on Radiation Processing*, Sept. 14! 19, 1992, Beijing, China, sponsored by the International Atomic Energy Agency. Contact: International Meeting on Radiation Processing, P.O. Box 1012 (30), Beijing 100 822, China.

*6th Annual INEL Computing Symposium*, Sept. 22! 14, 1992, Idaho Falls. Contact: Teri Williams, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415-2602 (phone 208-526-9728).

*International Symposium on Nuclear Data Evaluation Methodology*, Sept. 28! Oct. 2, 1992, Upton, New York, sponsored by Brookhaven National Laboratory. Contact: C. L. Dunford, Brookhaven National Laboratory, NNDC/197D, Upton, New York.

*14th International Conference on Plasma Physics and Controlled Nuclear Fusion Research*, Sept. 30! Oct. 7, 1992, Wuerzburg, Germany, sponsored by the International Atomic Energy Agency. Contact: IAEA, Conference Service Section, P.O. Box 100, A-1400 Vienna, Austria.

### October 1992

*Selection and Preparation of Witnesses for Environmental Litigation*, Oct. 22! 23, 1992, a course sponsored by the University of Texas at Austin. Contact: Continuing Engineering Studies, The University of Texas at Austin,

College of Engineering, ECJ 10.324, Austin, TX  
78712 (phone 512-471-3506, Fax 512-471-  
0831).

Contact: Stan A. Huber Consultants, Inc., 200  
N. Cedar Road, New Lenox, IL 60451 (phone  
815-485-6161; Fax 815-485-4433).

#### November 1992

*1992 ANS/ENS International Meeting*, Nov. 15! 20,  
1992, Chicago. Contact: General Chair James  
D. Shiffer, Pacific Gas & Electric Co., 77 Beale  
St., San Francisco, CA 94106 (phone 415-973-  
4684).

*Basic Radiation Safety & Management*, Nov.  
19! 20, 1992, Chicago, Illinois, a seminar  
presented by Stan A. Huber Consultants, Inc.

#### April 1993

*Joint International Conference on Mathematical  
Methods and Supercomputing in Nuclear  
Applications*, Apr. 19! 23, 1993, Karlsruhe,  
Germany. Contact: H. Kuesters, KFK/INR,  
Postfach 3640 D-W-7500 Karlsruhe 1,  
Germany, or W. Werner, GRS, D-W-8046  
Garching, Germany.

## FEBRUARY ACCESSION OF LITERATURE

The following literature cited has been ordered for review, and that selected as suitable will be placed in the RSIC Information Storage and Retrieval Information System (SARIS). This early announcement is made as a service to the shielding community. Copies of the literature are not distributed by RSIC. 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.

*RSIC maintains a microfiche file of the literature entered into SARIS, and duplicate copies of out-of-print reports may be available on request. Naturally, we cannot fill requests for literature which is copyrighted (such as books or journal articles) or whose distribution is restricted.*

This literature is on order. It is not in our system. Please order from NTIS or other available source as indicated.

## RADIATION SHIELDING LITERATURE

- INDC(CCP)-341.** . *The Gross and Fine Structure of the Mass Distributions of the Fragments in the Binary Fission of Actinides.* . Goverdovsky, A.A.; Mitrofanov, V.F.; Khryachkov, V.A. . November 1991
- LA-12125-MS.** . *Augmentation of ENDF/B Fission Product Gamma-Ray Spectra by Calculated Spectra.* . Katakura, J.; England, T.R. . November 1991
- Nucl. Instrum. Methods in Phys. Resh., A305, 574-580.** . *Use of EGS4 for the Evaluation of the Performance of a Silicon Detector for X-Ray Digital Radiography.* . Bencivelli, W.; Bertolucci, E.; Bottigli, U.; Del Guerra, A.; Mazzei, D.; . Messineo, A.; Nelson, W.R.; Randaccio, P.; Rosso, V.; Russo, P.;Stefanini, A. . 1991
- Nucl. Sci. Eng., 110, 128-133.** . *Study of Actinide Photonuclear Reactions Induced by Gamma Radiation from Neutron Capture.* . Geraldo, L.P.; Cesar, M.T.F.; Moraes, M.A.P.V. . February 1992
- Nucl. Sci. Eng., 110, 134-156.** . *Gamma-Ray and Neutron Dose-Equivalent Buildup Factors for Infinite Slabs.* . Dunn, W.I.; Yacout, A.M.; O'Foghlu, F.; Riel, G. . February 1992
- Nucl. Sci. Eng., 110, 157-164.** . *New Approximate Orientation Averaging of the Water Molecule Interacting with the Thermal Neutron.* . Markovic, M.I.; Minic, D.M.; Rakic, A.D. . February 1992
- Nucl. Sci. Eng., 110, 168-176.** . *Neutron Spectra and Flux Calculation in Thermalizing Regions in Liquid-Metal Reactors.* . Mirza, N.M.; Ott, K.O. . February 1992

**Nucl. Sci. Eng., 110, 186-194.** . *Fuel Assembly Assay by Neutron Interrogation in a Lead Slowing-Down-Time Spectrometer.* . Vanterpool, E.C.; Slovacek, R.E.; Harris, D.R.; Block, R.C. . February 1992

**Nucl. Sci. Eng., 110, 195-199.** . *The Neutron Streaming Term in a Generalized Coordinate System.* . Way, Y.S.; Way, Y.M. . February 1992

**Nucl. Sci. Eng., 110, 205-206.** . *SNCONV.* . Ganguly, K.; Tucker, G.; Allen, E.J.; Victory, H.D. . . . February 1992