



**Funchal, Madeira Island (Portugal)  
May 9-14, 2004**

**Programme and Schedule of the Sessions**





### ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|                     | <b>Sunday<br/>9<sup>th</sup> May</b> | <b>Monday<br/>10<sup>th</sup> May</b> | <b>Tuesday<br/>11<sup>th</sup> May</b> | <b>Wednesday<br/>12<sup>th</sup> May</b> | <b>Thursday<br/>13<sup>th</sup> May</b> | <b>Friday<br/>14<sup>th</sup> May</b> |                         |             |                        |             |                         |  |
|---------------------|--------------------------------------|---------------------------------------|--|--|---|---------------------------------------|-------------------------|-------------|------------------------|-------------|-------------------------|--|
| 09:30<br>–<br>18:00 | Registration                         | 07:30                                 | Registration                           |  |   |                                       |                         |             |                        |             |                         |  |
|                     |                                      | 08:30-09:00                           | Welcome                                | 08:30-10:00                              | Plenary Session (3×30')                 | 08:30-10:00                           | Plenary Session (3×30') | 08:30-10:30 | Parallel (3)           | 08:30-10:30 | Parallel (3)            |  |
|                     |                                      | 09:00-10:30                           | Opening Plenary (3×30')                |  |   |                                       |                         |             |                        |             |                         |  |
|                     |                                      | 10:30-10:50                           | Coffee Break                           | 10:00-10:20                              | Coffee Break                            | 10:00-10:20                           | Coffee Break            | 10:30-10:50 | Coffee Break           | 10:30-10:50 | Coffee Break            |  |
|                     |                                      | 10:50-12:50                           | Parallel (3)                           | 10:20-12:20                              | Parallel (3)                            | 10:20-12:20                           | Parallel (3) + Posters  | 10:50-12:50 | Parallel (3)           | 10:50-12:50 | Closing Plenary (4×30') |  |
|                     |                                      | 12:50-14:00                           | Lunch Break                            | 12:20-13:45                              | Lunch Break                             | 12:20-13:45                           | Lunch Break             | 12:50-14:00 | Lunch Break            | 12:50-13:00 | Closing remarks         |  |
|                     |                                      | 14:00-16:00                           | Parallel (3) + Posters                 | 13:45-15:45                              | Parallel (3) + Posters                  | 13:45-15:45                           | Parallel (3) + Posters  | 14:00-16:00 | Parallel (3) + Posters |             |                         |  |
|                     |                                      | 16:00-16:20                           | Coffee Break                           | 15:45-16:05                              | Coffee Break                            |                                       |                         | 16:00-16:20 | Coffee Break           |             |                         |  |
|                     |                                      | 16:20-18:20                           | Parallel (3) + Posters                 | 16:05-18:05                              | Parallel (3) + Posters                  | 15:45-20:00                           | <b>SOCIAL PROGRAMME</b> | 16:20-18:20 | Parallel (4) + Posters |             |                         |  |
| 18:00 – 20:00       | <b>Reception</b>                     |                                       |  | 20:00                                    | <b>Conference Dinner</b>                |                                       |                         |             |                        |             |                         |  |



## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|             | <b>Monday<br/>10<sup>th</sup> May</b>  |
|-------------|--|
| 08:30-09:00 | Welcome & Opening Remarks (A)  |
| 09:00-10:30 | Opening Plenary (3×30')<br>(A)   |
| 10:30-10:50 | <b>Coffee Break</b>  |
| 10:50-12:50 | 12-3 Monte Carlo - Methods and Applications at Low Energy Facilities – 1 (A)<br>6-1 Fission Reactor, Fuel Cycle Facility and Fusion Reactor Shielding (CR)<br>21-1 Source Term Evaluations (N)                 |
| 12:50-14:00 | <b>Lunch Break</b>   |
| 14:00-16:00 | 13-1 Nuclear Data for Shielding Applications – 1 (N)<br>11-1 Medical Applications - Proton Radiation Cancer Therapy (A)<br>18-1 Shielding Design – Planned or Existing Installations (CR)<br>P5, P15, P16 (NH) |
| 16:00-16:20 | <b>Coffee Break</b>  |
| 16:20-18:20 | 1-1 Shielding Studies of Various Accelerator Facilities (A)<br>13-2 Nuclear Data for Shielding Applications – 2 (N)<br>18-2 Shielding Design - Methods and Data (CR)<br>P5, P15, P16 (NH)                      |

(A) – Auditorium, (CR) – Conference Room, (N) – Niemeyer room, (B) – Brussels room, (NH) – Niemeyer Hall



## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|             | <b>Tuesday<br/>11<sup>th</sup> May</b>   |
|-------------|--|
| 08:30-10:00 | Plenary<br>The Future Evolution of the International Radiological Protection System (3×30')<br>(A)   |
| 10:00-10:20 | <b>Coffee Break</b>  |
| 10:20-12:20 | 12-4 Monte Carlo - Methods and Applications at Low Energy Facilities – 2 (A)<br>9-1 Impact of Radiation and Radioactivity on the Environment (CR)<br>26-1 Radiobiology Issues (N)  |
| 12:20-13:45 | <b>Lunch Break</b>   |
| 13:45-15:45 | 2-1 Activation and Induced Radioactivity I – Predictions (N)<br>11-2 Medical Applications - Recent Advances in External Beam Photon Radiation Cancer Therapy(A)<br>16-1 Radiation Dosimetry – 1 (CR)<br>P3, P6, P12, P17, P19 (NH) |
| 15:45-16:05 | <b>Coffee Break</b>  |
| 16:05-18:05 | 1-2 Shielding Studies of Proton Accelerator Facilities (A)<br>16-2 Radiation Dosimetry – 2 (CR)<br>2-2 Activation and Induced Radioactivity I - Experiments and Benchmarks (N)<br>P3, P6, P12, P17, P19 (NH)                       |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|             | <b>Wednesday<br/>12<sup>th</sup> May</b>  |
|-------------|---|
| 08:30-10:00 | Plenary<br>Challenging Projects (3×30')<br>(A)  |
| 10:00-10:20 | <b>Coffee Break</b>   |
| 10:20-12:20 | 12-1 Monte Carlo - High Energy Accelerators – 1 (A)<br>17-1 Radiation Shielding in Aeronautics and Space Missions (CR)<br>15-2 Radiation Detection and Measurement - Development of New Detection Systems (N)<br>P1, P2 (NH)                        |
| 12:20-13:45 | <b>Lunch Break</b>  |
| 13:45-15:45 | 15-3 Radiation Detection and Measurement - Detector Characterization (N)<br>11-3 Medical Applications - New Technologies in Medical Applications of Radiation (A)<br>17-2 Radiation Shielding in Aeronautics and Space Missions (CR)<br>P1, P2 (NH) |
| 15:45-20:00 | <b><i>SOCIAL PROGRAMME</i></b>  |
| 20:00       | <b><i>Conference Dinner</i></b>   |

(A) – Auditorium, (CR) – Conference Room, (N) – Niemeyer room, (B) – Brussels room, (NH) – Niemeyer Hall



## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|             | <b>Thursday<br/>13<sup>th</sup> May</b>   |
|-------------|---|
| 08:30-10:30 | 12-5 Monte Carlo - High Energy Accelerators – 2 (A)<br>25-1 Aircraft Dosimetry ( <i>Please note unusual duration - 8:30:11:30</i> ) (CR)<br>10-1 Industrial Applications of Radiation (N)                                   |
| 10:30-10:50 | <b>Coffee Break</b>   |
| 10:50-12:50 | 15-1 Radiation Detection and Measurement - In Space and Particle Accelerators (A)<br>5-1 Exposure Evaluation and Radiation Protection (N)<br>22-1 Storage and Transportation of Radioactive Materials – 1 (B)               |
| 12:50-14:00 | <b>Lunch Break</b>  |
| 14:00-16:00 | 28-1 Transmutation Issues (CR)<br>11-4 Medical Applications - Brachytherapy and Neutron Capture Therapy (A)<br>3-1 Analytical Methods (N)<br>P11, P13, P18, P22, P23 (NH)   |
| 16:00-16:20 | <b>Coffee Break</b>   |
| 16:20-18:20 | 27-1 Hybrid and Variance Reduction Methods and Their Applications (A)<br>24-1 Special Topics (B)<br>3-2 Skyshine, Streaming, and Albedo Calculations (N)<br>19-1 Shielding Experiments (CR)<br>P11, P13, P18, P22, P23 (NH) |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|             |  |
|-------------|--|
|             | <p><b>Friday</b><br/><b>14<sup>th</sup> May</b></p>  |
| 08:30-10:30 | 12-2 Monte Carlo - Electron Photon Monte Carlo Methods and Applications (A)<br>1-3 Data and Methods for Accelerator Shielding (CR)<br>22-2 Storage and Transportation of Radioactive Materials – 2 (N) |
| 10:30-10:50 | <p><b>Coffee Break</b></p>   |
| 10:50-12:50 | Closing Plenary (4×30')<br>(A)   |
| 12:50-13:00 | Closing Remarks  |
|             |  |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

| <b><u>Monday, 10<sup>th</sup> May, 2004</u></b> |                                      |  |
|---|--------------------------------------|--|
| <b>Opening Plenary Session (A)</b>              |                                      |  |
| 8:30 – 9:00                                     | <b>Welcome &amp; Opening Remarks</b> |  |
|   |                                      |  |
| <b>I1</b><br>09:00                              | <i>Paul M. DeLuca</i>                | Radiation Medical Sciences-Shielding Application: A Century of Development and Success |
| <b>I2</b><br>09:30                              | <i>Alex Bielajew</i>                 | Big Challenges in Monte Carlo: from Physics to Biology                                 |
| <b>I3</b><br>10:00                              | <i>Bernd Grosswendt</i>              | Nanodosimetry: From Radiation Physics to Radiation Biology                             |
| 10:30 – 10:50                                   | <b>Coffee Break</b>                  |  |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

### Monday, 10<sup>th</sup> May, 2004

**10:50 — 12:50**

| <b>Session 12-3 - Methods and Applications at Low Energy Facilities (A)</b><br><b>Chairs: Jeff Favorite; John Hendricks</b> |                                 |   | <b>Session 6-1 – Fission and Fusion Reactor Shielding (CR)</b><br><b>Chairs:</b> |                        |  | <b>Session 21-1 – Source Term Evaluation (N)</b><br><b>Chairs: Erik Shores</b> |                          |  |
|---|---------------------------------|---|--|------------------------|--|--|--------------------------|--|
| <b>O1</b><br>10:50  | <i>Stefan Taczanowski</i>       | Design and Experimental Objectives Considerations of the SAD* Accelerator-Driven System   | <b>O1</b><br>10:50   | <i>Stefano Agosteo</i> | Gamma Dose from Activation of Internal Shields in IRIS Reactor   | <b>O1</b><br>10:50   | <i>Jan R. Terry</i>      | Modern New Nuclear Fuel Characteristics and Radiation Protection Aspects   |
| <b>O2</b><br>11:05  | <i>Surik Bznuni</i>             | Monte Carlo Modeling of Features of Advanced Reactor Systems  | <b>O2</b><br>11:10   | <i>Bohumil Ošmera</i>  | Measurement and Calculation of the Fast Neutron and Photon Spectra from the Core Boundary to the Biological Shielding in WWER-1000 Reactor Model | <b>O2</b><br>11:10   | <i>Marco Cometto</i>     | Non-destructive Method of Characterization of Radioactive Waste Containers Using Gamma Spectroscopy and Monte Carlo Techniques |
| <b>O3</b><br>11:20  | <i>Gray Chang</i>               | Hardening Neutron Spectrum for Advanced Actinides Transmutation Experiments in ATR  | <b>O3</b><br>11:30   | <i>Naoteru Odano</i>   | Radiation Safety Assessment of Small Reactors for Distributed Energy System  | <b>O3</b><br>11:30   | <i>Erik F. Shores</i>    | Sources: A Code for Calculating (ALPHA, N), Spontaneous Fission and Delayed Neutron Sources and Spectra                        |
| <b>O4</b><br>11:35  | <i>John S. Hendricks</i>        | Calculation of Eigenfunction Fluxes in Nuclear Systems  | <b>O4</b><br>11:50   | <i>Gábor Hordósy</i>   | Reactor Dosimetry Calculations for WWER-440 Reactors   | <b>O4</b><br>11:50   | <i>Gert Sdouz</i>        | Computer Based Determination of Source Terms for Emergency Preparedness  |
| <b>O5</b><br>11:50  | <i>George Wright</i>            | Application of MCBEND to PBMR Shielding Analysis  | <b>O5</b><br>12:10   | <i>Marco Cometto</i>   | Activation Analysis of Concrete and Graphite in the Experimental Reactor RUS   | <b>O5</b><br>12:05   | <i>Nikolai Gorin</i>     | Computational Study of Physical Processes Proceeding in the IGR Reactor Core with Use of the PRIZMA.D Code                     |
| <b>O6</b><br>12:05  | <i>Michèle Coeck</i>            | Evaluation of the Neutron Spectrum and Dose Assessment Around the VENUS Reactor   | <b>O6</b><br>12:30   | <i>Bertram Boehmer</i> | Creation and Evaluation of the VVER-1000 Balakovo-3 Ex-vessel Dosimetry Benchmark for the NEA SINBAD Data Base                                   | <b>O6</b><br>12:20   | <i>Nicola Cerullo</i>    | An Additional Performance of HTRs: the Capability to Burn Actinides  |
| <b>O7</b><br>12:20  | <i>Andrea Borio di Tigliole</i> | Characterization of Triga-Type Research Reactor Irradiation Facilities by Means Of Monte Carlo Calculations and Direct Measurements |  |                        |  | <b>O7</b><br>12:35   | <i>Parvaneh Shokrani</i> | Pathway Screening Analysis for a Hypothetical Nuclear Power Plant Located in Isfahan   |
| <b>O8</b><br>12:35  | <i>Luigino Petrizzi</i>         | Benchmarking of Monte Carlo Based Shutdown Dose Rate Calculations for Applications to JET   |  |                        |  |  |                          |  |
| <b>Lunch</b>  |                                 |   |  |                        |  |  |                          |  |



ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

**Monday, 10<sup>th</sup> May, 2004**

14:00 – 16:00

| <b>Session 13-1 – Nuclear Data for Shielding Applications I (N)</b><br><b>Chairs: N. Yamano; Luiz Leal</b> |                                  |  | <b>Session 11-1 – A Proton Radiation Cancer Therapy (A)</b><br><b>Chairs: Paul DeLuca; Wayne Newhauser</b> |                        |  | <b>Session 18-1 – Shielding design of planned or existing installations (CR)</b><br><b>Chairs: Yacine Kadi; Phil Ferguson</b> |                            |   |
|--|----------------------------------|--|--|------------------------|--|---|----------------------------|---|
| <b>O1</b><br>14:00   | <i>Naoki Yamano</i>              | Integrated Nuclear Data Utilization System for Innovative Reactors   | <b>O1</b><br>14:00   | <i>Markus Fitzek</i>   | An Update of Clinical Experience with Proton Radiotherapy  | <b>O1</b><br>14:00  | <i>Phil Ferguson</i>       | Target Station Shielding Issues at the Spallation neutron Source  |
| <b>O2</b><br>14:20   | <i>Aleksander Polanski</i>       | Development of Quantum Molecular Dynamic (QMD) Model to Describe Fission and Fragment Production                         | <b>O2</b><br>14:20   | <i>Uwe Titt</i>        | Neutron Shielding in a Proton Therapy Facility Based on Monte Carlo Simulations: The Design Method of Choice | <b>O2</b><br>14:20  | <i>Yoshihiro Asano</i>     | Calculations for the Availability of Photoneutron Using Synchrotron Radiation                                     |
| <b>O3</b><br>14:40   | <i>Luiz Carlos Leal</i>          | Covariance and Sensitivity Data Generation at ORNL   | <b>O3</b><br>14:40   | <i>W. D. Newhauser</i> | A Neutron Radiation Area Monitoring System for Proton Therapy Facilities                                     | <b>O3</b><br>14:40  | <i>Mario J. Mueller</i>    | Shielding Design of an Underground Experimental Area at Point 5 of the CERN Super Proton Synchrotron (SPS)        |
| <b>O4</b><br>15:00   | <i>Liviu-Cristian Mihailescu</i> | Measurement of Neutron Inelastic Scattering Cross Sections for Cr-52 from Threshold up to 18 MeV                         | <b>O4</b><br>15:00   | <i>Jeremy C. Polf</i>  | Calculations of Neutron Dose Equivalent Values for a Proton Spot Scanning Nozzle                             | <b>O4</b><br>15:00  | <i>Stefano Monti</i>       | The TRADE Experiment: Shielding of the Beam Transport Line  |
| <b>O5</b><br>15:20   | <i>Luiz Carlos Leal</i>          | R-Matrix Evaluation of Cl Neutron Cross Sections up to 1.2 MeV   | <b>O5</b><br>15:20   | <i>Nick Koch</i>       | Virtual Commissioning of a Treatment Planning System for Proton Therapy of Ocular Cancers                    | <b>O5</b><br>15:20  | <i>Christian Hranitzky</i> | Shielding Variation Effects for 250 MeV Protons on Tissue Targets   |
| <b>O6</b><br>15:40   | <i>Robert C. Block</i>           | Neutron Capture and Total Cross-Section Measurements and Resonance Parameter Analysis of Neodymium from 1.0 eV TO 500 eV | <b>O6</b><br>15:40   | <i>Martin Bues</i>     | Proton Beam Shaping with a Multi-Leaf Collimator: A Monte Carlo Study  | <b>O6</b><br>15:40  | <i>Phil Ferguson</i>       | Shielding and Background Rate Calculations for the Spallation Neutron Source Chopper Spectrometers ARCS & SEQUOIA |
| <b>Coffee Break</b>  |                                  |  |  |                        |  |   |                            |   |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

### Monday, 10<sup>th</sup> May, 2004

16:20 — 18:20

| <b>Session 1-1 – Shielding study of various accelerator facilities (A)</b><br>Chairs: Pankakkal K. Job; Yoshihiro Asano |                          |   | <b>Session 13-2 – Nuclear Data for Shielding Applications II (N)</b><br>Chairs: S. Leray; Luiz Leal |                         |   | <b>Session 18-2 – Shielding Design Methods and Data (CR)</b><br>Chairs: Yacine Kadi |  |  |
|---|--------------------------|---|---|-------------------------|---|---|--|--|
| O1<br>16:20   | <i>Sayed H. Rokni</i>    | Calculations of Neutron and Photon Source Terms and Attenuation Profiles for the Generic Design of SPEAR3 Storage Ring Shield | O1<br>16:20   | <i>Luiz C. Leal</i>     | Evaluation of Silicon Neutron Resonance Parameters in the Energy Range Thermal to 1800 keV      | O1<br>16:20   | <i>John Hobson</i>                     | Radiation Protection and Shielding Design - Strengthening the Link                               |
| O2<br>16:40   | <i>Vaclav Vylet</i>      | Shielding for the Upgraded Duke Free Electron Laser Laboratory  | O2<br>16:40   | <i>Giuseppe Maino</i>   | Theoretical Estimates of Nuclear Data for Radiation Shielding: Present Status and Perspectives  | O2<br>16:40   | <i>Augusto Manuel Dias de Oliveira</i> | Comparison of Deterministic and Monte Carlo Methods in Shielding Design                          |
| O3<br>17:00   | <i>Torsten Radon</i>     | Monte-Carlo Simulations for the Shielding of the future high-intensity accelerator facility at GSI                            | O3<br>17:00   | <i>Do Heon KIM</i>      | Generation and Validation of a Shielding Library Based on ENDF/B-VI.8                           | O3<br>17:00   | <i>Koichi Okuno</i>                    | Neutron Shielding Material Based on Colemanite and Epoxy Resin                                   |
| O4<br>17:20   | <i>Russell Croxford</i>  | Considerations in PET Cyclotron Shielding   | O4<br>17:20   | <i>Yu. E. Titarenko</i> | MENDL2 and IEAF-2001 Nuclide Production Yields Data Bases Verification at Intermediate Energies | O4<br>17:20   | <i>Klaus Noack</i>                     | Shielding Design for the PANDA Spectrometer at the Munich High-Flux Reactor FRM-II               |
| O5<br>17.40   | <i>Shiang-Huei Jiang</i> | The Refined Shielding Design for the Cyclotron Room of the Buddhist Tzu Chi General Hospital                                  | O5<br>17:40   | <i>S. Leray</i>         | Impact of High Energy Nuclear Data on the Radio Protection in Spallation Sources                | O5<br>17:40   | <i>Piero Neuhold</i>                   | Monte Carlo Evaluations and the Source Normalization Problem                                     |
| O6<br>18:00   | <i>Alessandro Porta</i>  | Beam Dumps Design and Local Radiation Protection at TERA Synchrotron  | O6<br>18:00   | <i>M.M. Ninkovic</i>    | Air Kerma Rate Constants for Gamma Emitters the Most Often Used in the Practice                 | O6<br>18:00   | <i>Jong-Won Kim</i>                    | Design of Radiation Shielding for the Proton Therapy Facility at National Cancer Center in Korea |

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**Monday, 10<sup>th</sup> May, 2004**

**POSTER SESSIONS**

| <b>Session P5</b><br><b>Exposure Evaluation and Radiation Protection</b><br><b>14:00 – 18:20</b><br><b>(NH)</b> |                            |   |
|---|----------------------------|---|
| <b>P1</b>   | <i>Robert Devine</i>       | Monte Carlo Modeling of a Simple Accident Dosimeter   |
| <b>P2</b>   | <i>JR Worsham</i>          | U.S. NRC Questions Concerning Irradiation Damage During Life Extension  |
| <b>P3</b>   | <i>Yoshitomo Uwamino</i>   | Radiation Protection System at RIKEN RI Beam Factory  |
| <b>P4</b>   | <i>Ayad M. Shahout</i>     | Buildup Factor Measurements of Gamma-Rays for Single and Multi Layer Shields Used for Radiation Protection  |
| <b>P5</b>   | <i>Sumi Yokoyama</i>       | Development of Lung and Soft Tissue Substitutes for Photons   |
| <b>P6</b>   | <i>X. George Xu</i>        | Effective Dose for Patients Undergoing Femoral Intravascular Radiotherapy Involving Ir-192 Source   |
| <b>P7</b>   | <i>Fernand Vermeersch</i>  | ALARA Pre-Job Studies Using the VISIPLAN 3D ALARA Planning Tool   |
| <b>P8</b>   | <i>X. George Xu</i>        | The Latest Data on Effective Dose (Equivalent) for Hot Particles on the Skin  |
| <b>P9</b>   | <i>Nolan E. Hertel</i>     | Bremsstrahlung Dose Rates from Natural Uranium Ingots   |
| <b>P10</b>  | <i>Eduard F. Kryuchkov</i> | Radiation Protection Potential of MOX-Fuel Doped with <sup>231</sup> Pa and Cs-Radioisotopes  |
| <b>P11</b>  | <i>Stephanie Ménard</i>    | Modelling of a Simple Bunker Problem with Monte Carlo Codes TRIPOLI 4.3 and MCNPX 2.4 with the Aim of Testing the Efficiency of the Biasing Methods |
| <b>P12</b>  | <i>Bobby E. Leonard</i>    | Radon Inverse Dose-Rate Effect and High Let Galactic Hazards  |
| <b>P13</b>  | <i>R.J. Tanner</i>         | Redesign of the NRPB β/γ TLD Personal Dosimeter Holder  |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

| <b>Session P16</b><br><b>Radiation Dosimetry</b><br><b>14:00 – 18:20</b><br><b>(NH)</b> |                        |  |
|---|------------------------|--|
| <b>P1</b>   | Luiz Oliveira de Faria | High Thermoluminescence Response of $K_2YF_5:Tb^{3+}$ Single Crystals Grown Under Hydrothermal Conditions                            |
| <b>P2</b>   | Helio Yoriyaz          | A New Human Eye Model for Ophthalmic Brachytherapy Dosimetry   |
| <b>P3</b>   | Gianfranco Gualdrini   | Monte Carlo Modelling of a VOXEL Head Phantom for "in vivo" Measurement of Bone-Seeker Nuclides                                      |
| <b>P4</b>   | Philippe Crovisier     | French Comparison Exercise with the Rotating Neutron Spectrometer (ROSPEC)   |
| <b>P5</b>   | Y.K. Lee               | Analysis of Neutron and Photon Response of a TLD-Albedo Personal Dosimeter on an ISO Slab Phantom Using TRIPOLI-4.3 Monte Carlo Code |
| <b>P6</b>   | Akiko Konnai           | Energy Response of LiF and $Mg_2SiO_4$ TLDs to 50-150 keV Monoenergetic Photons  |
| <b>P7</b>   | Helen Jamil Khoury     | Evaluation of Patient Dose for Mammography in Pernambuco-Brazil  |
| <b>P8</b>   | Jung-II Lee            | On the Roles of the dopants in LiF:Mg,Cu,Na,Si Thermoluminescent Material  |
| <b>P9</b>   | Jung-II Lee            | A computer Program for the Deconvolution of Thermoluminescence Glow Curves   |
| <b>P10</b>  | Agnese Zuccarello      | TL/EPR Cross-Study on GR-200A Crystals   |
| <b>P11</b>  | Christelle Lahaye      | Characterisation of GR-200A TL Emission  |
| <b>P12</b>  | Donald J. Dudziak      | Neutron/Photon Dose Rate Calculations for Sources in Glovebox Operations   |
| <b>P13</b>  | Nuno Teixeira          | Geometric and Dosimetric audits to European brachytherapy Centres  |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

| <b>Session P15</b><br><b>Radiation Detection and Measurement</b><br><b>14:00 – 18:20</b><br><b>(NH)</b> |                             |  |
|---|-----------------------------|--|
| <b>P1</b>   | <i>Laurence Miller</i>      | Micromegas Neutron Beam Monitor Neutronics   |
| <b>P2</b>   | <i>Andrea Pola</i>          | Secondary Photon Fields Produced in Accelerator-Based Sources for Neutron Generation   |
| <b>P3</b>   | <i>Yi-Kang Lee</i>          | Evaluation of N50 Neutron Slab Monitor Detection Efficiency with TRIPOLI-4.3 Monte Carlo Code  |
| <b>P4</b>   | <i>Michael Glauber</i>      | Development of Prototypes of Bioequivalent Ionizing Radiation Detectors  |
| <b>P5</b>   | <i>José Ródenas</i>         | Analysis of Shielding Materials in a Compton Spectrometer Applied to X-ray Tube Quality Control  |
| <b>P6</b>   | <i>Elena N. Lipilina</i>    | Evaluations of Parameters of Reactor MIGR Hodoscope  |
| <b>P7</b>   | <i>Nikolai Gorin</i>        | The Development of Method of Neutron Source Detection in Soil  |
| <b>P8</b>   | <i>Marco Sumini</i>         | Montecarlo Simulation of Neutron Backscattering from Concrete Walls in the Dense Plasma Focus Laboratory of Bologna University   |
| <b>P9</b>   | <i>Robert Alan Price</i>    | Towards an Optimum Design of a p-MOS Radiation Detector for Use in High Energy Medical Photon Beams: Analysis and Removal of Activation Materials                                  |
| <b>P10</b>  | <i>X. George Xu</i>         | Photon Fluence and Effective Dose from Spectral Information Obtained by a HPGe Gamma Spectrometer  |
| <b>P11</b>  | <i>François Borne</i>       | Dosimetry Expertise in the Vicinity of an Ultra-High Intensity Laser   |
| <b>P12</b>  | <i>Helen Jamil Khoury</i>   | The Performance of Commercial Photodiodes for Dosimetry in Mammography   |
| <b>P13</b>  | <i>Premkumar B. Saganti</i> | Model Calculated GCR Environment: Assessment of Neutron Flux at Mars   |
| <b>P14</b>  | <i>Isabel F. Gonçalves</i>  | Towards the Enhancement of Photon/Neutron Discrimination of C6D6 Detectors in the Energy Range from 1 MeV to 10 MeV Using Liquid Scintillator Materials Doped with High Z Elements |
| <b>P15</b>  | <i>Ana Rita Lopes Ramos</i> | Neutron Spectrometry with Large Volume, Heavy-Loaded Superheated Droplet Detectors: a SIMPLE Spin-Off  |
| <b>P16</b>  | <i>Yasemin Yazar</i>        | Determination of Radon Concentrations of Dikili Geothermal Area in Western Turkey  |
| <b>P17</b>  | <i>Yasemin Yazar</i>        | Determination of the Environmental Radioactivity Concentrations of Tekirdağ in Turkey  |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|  |                            |  |
|--|----------------------------|--|
| <p><b><u>Tuesday, 11<sup>th</sup> May, 2004</u></b></p> <p><b>Plenary Session (A)</b></p> <p><i>The Future Evolution of the International Radiological Protection System</i></p> |                            |  |
| <p><b>I1</b><br/>08:30</p>   | <p>Roger Clarke</p>        | <p>Draft 2005 Recommendations of ICRP</p>  |
| <p><b>I2</b><br/>09:00</p>   | <p>Hans Menzel</p>         | <p>Dosimetric Quantities for Radiation Protection of Humans<br/>Considerations for Non-Human Species</p> |
| <p><b>I3</b><br/>09:30</p>   | <p>Robert Dixon</p>        | <p>Modern Radiation Protection Standards: Their Evolution from Science to Religion</p>                   |
| <p>10:00 – 10:20</p>   | <p><b>Coffee Break</b></p> |  |

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ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

**Tuesday, 11<sup>th</sup> May, 2004**

10:20 — 12:20

| Session 12-4 – <i>Methods and Applications at Low Energy Facilities.II (A)</i><br>Chairs: <i>Bryan Broadhead; Laurence Miller</i> |                                |  | Session 9-1 – <i>Impact of Radiation and Radioactivity on the Environment (CR)</i><br>Chairs: <i>Daniela Ene; David Anderson</i> |                            |  | Session 26-1 – <i>Radiobiology Issues (N)</i><br>Chairs: <i>José Rueff; Bernd Grosswendt</i> |                               |   |
|---|--------------------------------|--|--|----------------------------|--|--|-------------------------------|---|
| O1<br>10:20   | <i>Pat Cowan</i>               | The Launch of MCBEND 10  | O1<br>10:20  | <i>Daniela Ene</i>         | Test Case of the Long Term Preliminary Performance Assessment for the L&IL Radioactive Waste Repository Baita Bihor, Romania | O1<br>10:20  | <i>Alain Léonard</i>          | Usefulness and Limits of Biological Dosimetry Based on Cytogenetic Methods  |
| O2<br>10:35   | <i>Arjan Plompen</i>           | GELINA Neutron Target Optimisation   | O2<br>10:40  | <i>Frank Gutermuth</i>     | Radiation Impact on the Environment Caused by Activation of Air by the Future Heavy Ion Accelerator Facility at GSI          | O2<br>11:10  | <i>José Rueff</i>             | Cytogenetic Biomarkers in Radiobiology  |
| O3<br>10:50   | <i>Yoshitaka Naito</i>         | Calculation on Energy Spectrum of Deeply Penetrated Neutron by Monte Carlo Method                        | O3<br>11:00  | <i>Marko Maučec</i>        | Determination of Broadening Functions of Core Logger PHAROS by Monte Carlo Simulations                                       | O3<br>11:30  | <i>Alegria Montoro Pastor</i> | Assessment of the Radioprotection Properties of Propolis Extract Using in Vitro Cultures After Gamma Irradiation                                    |
| O4<br>11:05   | <i>Helio Yoriyaz</i>           | Experimental and Monte Carlo Method Evaluation of the Neutrons Flux of an Assembly with Two AmBe Sources | O4<br>11:20  | <i>Flavia Groppi</i>       | On the High-Resolution Gamma-Ray Spectrometric Measurement of K-40 in Natural and Synthetic Materials                        | O4<br>11:50  | <i>Yasemin Yazar</i>          | Investigation of the Biological Dose Caused by Radioactive Materials Which Are Used for Medical Diagnosis By Means of Micronucleus Analysis Methods |
| O5<br>11:20   | <i>Laurence Miller</i>         | Shielding for a Cyclotron used for Medical Isotope Production in China                                   | O5<br>11:40  | <i>Alexander Gerasimov</i> | Radiotoxicity and Decay Heat Power of Spent Nuclear Fuel of VVER Type Reactors at Long-Term Storage                          |  |                               |   |
| O6<br>11:35   | <i>John Mackey</i>             | Dose Rate Calculations for a Reconnaissance Vehicle Driving Through Contaminated Terrain                 |  |                            |  |  |                               |   |
| O7<br>11:50   | <i>Burkhard Heuel-Fabianek</i> | Benchmarking of MCNP for Calculating Dose Rates at an Interim Storage Facility for Nuclear Waste         |  |                            |  |  |                               |   |
| O8<br>12:05   | <i>David Griesheimer</i>       | Estimation of Fluence Distributions with Monte Carlo Functional Expansion Tallies                        |  |                            |  |  |                               |   |
| <b>Lunch</b>  |                                |  |  |                            |  |  |                               |   |

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ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

**Tuesday, 11<sup>th</sup> May, 2004**

13:45 – 15:45

| <b>Session 2-1 – Activation and Induced Radioactivity – Predictions (N)</b><br><b>Chairs: Sayed Rokni; Marco Silari</b> |                            |  | <b>Session 11-2 – Recent Advances in External-Beam Photon Radiation Cancer Therapy (A)</b><br><b>Chairs: Uwe Titt; Wayne Newhauser</b> |                             |   | <b>Session 16-1 – Radiation Dosimetry I (CR)</b><br><b>Chairs: Gianfranco Gualdrini; Rick Tanner</b> |                                  |   |
|---|----------------------------|--|--|-----------------------------|---|--|----------------------------------|---|
| <b>O1</b><br>13:45  | <i>Marco Silari</i>        | Radiation Protection Aspects of a 4 MW Target  | <b>O1</b><br>13:45   | <i>Thomas Guerrero</i>      | Elastic Image Mapping for 4D Dose Estimation in Thoracic Radiotherapy                                     | <b>O1</b><br>13:45   | <i>Isabelle Aubineau-Laniece</i> | Current Developments at IRSN on Computational Tools Dedicated to Dose Assessment for Both Internal and External Exposure        |
| <b>O2</b><br>14:05  | <i>Matteo Magistris</i>    | Radiation Issues in a Radioactive ion Decay Ring                                     | <b>O2</b><br>14:05   | <i>Susanne Larsson</i>      | Radiation Transport Calculations for Narrow Scanned Photon Beam Therapy Using the Monte Carlo Code GEANT4 | <b>O2</b><br>14:15   | <i>George Xu</i>                 | Comparison of Effective Doses from Various Monoenergetic Particle Based on the Stylized and the VIP-Man Tomographic Models      |
| <b>O3</b><br>14:25  | <i>Paul Berkvens</i>       | Induced Radioactivity in the ESRF Storage Ring                                       | <b>O3</b><br>14:25   | <i>Rebecca M. Howell</i>    | Measurements of Secondary Neutron Dose from 15MV and 18 MV IMRT   | <b>O3</b><br>14:35   | <i>Nolan E. Hertel</i>           | Effective Quality Factors for Neutrons Based on the Revised ICRP/ICRU Recommendations   |
| <b>O4</b><br>14:45  | <i>Arnold Fero</i>         | Characterization of Radioactive Waste Products Associated with Plant Decommissioning | <b>O4</b><br>14:45   | <i>Kenneth A. Van Riper</i> | A CT & MRI Scan to MCNP Input Conversion Program  | <b>O4</b><br>14:55   | <i>Ivo Kodeli</i>                | Analysis of QUADOS Problem on TLD-Albedo Personal Dosimeter Responses Using Discrete Ordinates and Monte Carlo Methods          |
| <b>O5</b><br>15:00  | <i>Michael J. Loughlin</i> | Estimates of Dose-Rates During the Dismantling of JET                                | <b>O5</b><br>15:05   | <i>Alfred Hogenbirk</i>     | ORANGE, a New, Fast Dose Engine for Radiotherapy Treatment Planning                                       | <b>O5</b><br>15:15   | <i>Valery Taranenko</i>          | Monte Carlo Simulation of Energy Deposition in Dental Ceramics and Aluminium Oxide and Comparison with Luminescence Measurement |
| <b>O6</b><br>15:15  | <i>Stefan Roesler</i>      | Remanent Dose Rates Around the Collimators of the LHC Beam Cleaning Insertions       | <b>O6</b><br>15:25   | <i>Markus Fitzek</i>        | Treatment Technique of Chordoma and Chondrosarcoma of the Skull Base with Proton Radiotherapy.            | <b>O6</b><br>15:30   | <i>Laurent Donadille</i>         | Feasibility Study of an Operational Extremity Dosimetry Prototype   |
| <b>O7</b><br>15:30  | <i>Michael P. Shannon</i>  | A Method for Predicting the Activity and Dose Rates of Research Reactor Components   |  |                             |   |  |                                  |   |
| <b>Coffee Break</b>   |                            |  |  |                             |   |  |                                  |   |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

### Tuesday, 11<sup>th</sup> May, 2004

16:05 — 18:05

| <b>Session 1-2 – Shielding study of proton accelerator facilities (A)</b><br>Chairs: <i>Irena Popova, Hee-Seack Lee</i> |                          |  | <b>Session 16-2 – Radiation Dosimetry II (CR)</b><br>Chairs: <i>Nolan Hertel; Hans-Georg Menzel</i> |                             |   | <b>Session 2-2 – Activation and Induced Radioactivity - Experiments and Benchmarking (N)</b><br>Chairs: <i>Sayed Rokni; Marco Silari</i> |                            |  |
|---|--------------------------|--|---|-----------------------------|---|--|----------------------------|--|
| <b>O1</b><br>16:05  | <i>Marco Silari</i>      | Shielding Design for the Front End of the CERN SPL   | <b>O1</b><br>16:05  | <i>Gianfranco Gualdrini</i> | “QUADOS” Intercomparison: a Summary of Photon and Charged Particle Problems   | <b>O1</b><br>16:05   | <i>Koji Oishi</i>          | Measurement and Analysis of Induced Activities in Concrete Irradiated by High Energy Neutrons at KENS Neutron Spallation Source Facility |
| <b>O2</b><br>16:25  | <i>Irina Popova</i>      | MCNPX vs. DORT for SNS Shielding Design Studies  | <b>O2</b><br>16:25  | <i>Augusto Oliveira</i>     | Photon track evolution  | <b>O2</b><br>16:25   | <i>Wladyslaw Pohorecki</i> | Spatial Distributions of Residuals Production Inside the Spallation Target   |
| <b>O3</b><br>16:45  | <i>Hiroshi Nakashima</i> | Radiation Safety Design for the J-PARC Project   | <b>O3</b><br>16:45  | <i>Ali A. Alghamdi</i>      | Neutron fluence-to-dose conversion coefficients in an anthropomorphic phantom   | <b>O3</b><br>16:45   | <i>Hiroshi Matsumura</i>   | Characteristics of high energy neutrons estimated by radioactive spallation products at 500 MeV neutron irradiation facility of KENS     |
| <b>O4</b><br>17:05  | <i>Young-Ouk Lee</i>     | Preliminary Shielding Assessment for a 100 MeV Proton Linac of the KOMAC   | <b>O4</b><br>17:05  | <i>Roberto Bedogni</i>      | Development of automatic systems for the ionizing radiation metrology at the ENEA-IRP secondary standard DOSIMETRY laboratory | <b>O4</b><br>17:05   | <i>Stefan Roesler</i>      | Benchmark studies of induced radioactivity produced in LHC materials. Part I: Specific activities  |
| <b>O5</b><br>17:25  | <i>Yixue Chen</i>        | Three-Dimensional Shielding Calculations for the IFMIF Neutron Source Using a Coupled Monte Carlo/Deterministic Computational Scheme | <b>O5</b><br>17:25  | <i>Oleg Kulinich</i>        | Insulated - Gate Fet - Based Absorbed Dose Dosimeter of Ionizing Radiations   | <b>O5</b><br>17:25   | <i>Stefan Roesler</i>      | Benchmark studies of induced radioactivity produced in LHC materials. Part II: Remanent dose rates                                       |
| <b>O6</b><br>17:45  | <i>Masayoshi Kawai</i>   | Study on NEUTRON Beam-Line Shield Design for JSNS  | <b>O6</b><br>17:45  | <i>Christelle Lahaye</i>    | An Approach to 3D Dose Mapping Using GafChromic(R) film   | <b>O6</b><br>17:45   | <i>Ivan Bědajánek</i>      | The induced radioactivity in the forward shielding and semiconductor tracker of the ATLAS detector                                       |

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**Tuesday, 11<sup>th</sup> May, 2004**

**POSTER SESSIONS**

**13:45 – 18:20**

|  |                              |  |
|--|------------------------------|--|
| <p>Sessions<br/> P3 - <i>Build-up Factor, Albedo, and Point Kernel Methods and Applications</i><br/> - <i>Discrete Ordinates and Related Topics</i><br/> - <i>Penetration and Duct Streaming</i><br/> - <i>Skyshine</i></p> <p style="text-align: center;"><b>13:45 – 18:20</b><br/>(NH)</p> |                              |  |
|  | <b>Submitting Author</b>     | <b>Title</b>   |
| <b>P1</b>  | <i>Fawzia A. El_Bakkoush</i> | Measurement of the Transmitted and Reflected Capture Gamma Rays for Heat Resistant Concrete Shield                           |
| <b>P2</b>  | <i>Jillali Ghassoun</i>      | On the <sup>252</sup> Cf Primary and Secondary Gamma Rays Through Cylindrical Moderator and Epithermal Neutron Beam for BNCT |
| <b>P3</b>  | <i>Yoshihiro Hirao</i>       | Development of Connection-Method Calculation Utility for the DORT-TORT Code  |

|  |                              |  |
|--|------------------------------|--|
| <p>Sessions<br/> P6 – <i>Fission Reactor Shielding</i><br/> - <i>Fuel Cycle Facility Shielding</i><br/> - <i>Fusion Reactor Shielding</i></p> <p style="text-align: center;"><b>13:45 – 18:20</b><br/>(NH)</p> |                              |  |
|  | <b>Submitting Author</b>     | <b>Title</b>   |
| <b>P1</b>  | <i>Fawzia A. El_Bakkoush</i> | The Status of Research Activities concerned with Shielding Materials at Tajoura Nuclear Research Centre  |
| <b>P2</b>  | <i>Fawzia A. El_Bakkoush</i> | Spatial Fluxes and Energy Distribution of Reactor Fast Neutrons and Gamma-Rays in Two Types of Concretes |
| <b>P3</b>  | <i>Hee-Seock Lee</i>         | Radioactivity Evaluation for the KSTAR Tokamak   |
| <b>P4</b>  | <i>Michinori Yamauchi</i>    | Shielding design of the ITER NBI Duct for nuclear and bremsstrahlung radiation                           |
| <b>P5</b>  | <i>Gábor Hordósy</i>         | Neutron and photon shielding benchmark calculations by MCNP on the LR-0 experimental facility            |
| <b>P6</b>  | <i>Pedro Ortego</i>          | MCNP calculation of photon flux in VVER-1000 experimental reactor  |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|  |                             |   |
|--|-----------------------------|---|
| Session<br><i>P17 - Radiation Shielding in Aeronautics and Space Missions</i><br><div style="text-align: center;">13:45 — 18:20<br/>(NH)</div> |                             |   |
|  | <b>Submitting Author</b>    | <b>Title</b>  |
| <b>P1</b>  | <i>Lawrence W. Townsend</i> | Multiple Solar Particle Event Dose Time Profile Predictions Using Bayesian Inference                  |
| <b>P2</b>  | <i>Pedro Ortego</i>         | Benchmarking of MCNPX with the experimental measurements of high energy Helium ions in HIMAC facility |
| <b>P3</b>  | <i>Premkumar B. Saganti</i> | Model Calculated GCR Modulations at Mars: Comparisons with MARIE                                      |
| <b>P4</b>  | <i>Insoo Jun</i>            | Comparison of high-energy trapped particle environments at the Earth and Jupiter                      |
| <b>P5</b>  | <i>Tatjana Jevremovic</i>   | Optimized On-Board Shielding for Nuclear Propulsion Manned Space Interplanetary Travel                |
| <b>P6</b>  | <i>Lawrence S. Pinsky</i>   | A FLUKA-Based Monte Carlo Transport Code for Space Radiation Simulation                               |

|  |                            |  |
|--|----------------------------|--|
| Session<br><i>P19 – Shielding Experiments</i><br><div style="text-align: center;">13:45 — 18:20<br/>(NH)</div> |                            |  |
|  | <b>Submitting Author</b>   | <b>Title</b>   |
| <b>P1</b>  | <i>Jameel Hefne</i>        | Gamma Ray Shielding from Saudi White Sand  |
| <b>P2</b>  | <i>Paulo Roberto Costa</i> | Evaluation of reference materials used for characterization of radiation shielding             |
| <b>P3</b>  | <i>V.G. Madeev</i>         | Measurements on ORM facility and analysis of secondary photons characteristics in heavy metals |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

| Session<br>P12 – Monte Carlo Method and Applications<br>13:45 — 18:20<br>(NH) |  |  |
|---|--|--|
|   | Submitting Author                        | Title  |
| P1  | <i>José Ródenas</i>                      | Simulation of Germanium detector calibration using the Monte Carlo method. Comparison between point and surface source models                |
| P2  | <i>Luis Peralta</i>                      | A new low energy bremsstrahlung generator for GEANT4   |
| P3  | <i>Hans-Joachim Fitting</i>              | Fast Relaxation of Ionization Induced Charge Carriers in Insulators  |
| P4  | <i>Delson Braz</i>                       | Monte Carlo Simulation of Photon Radiation Dose Enhancement in the Presence of Prostheses  |
| P5  | <i>Delson Braz</i>                       | Energy Deposited In Water-Equivalent Solid Materials Used as Phantoms in Dosimetry   |
| P6  | <i>Susanna Guatelli</i>                  | Technological Transfer from HEP to Medical Physics: How precise MonteCarlo simulations for brachytherapy can be applied in clinical practice |
| P7  | <i>Maximiliano Antonio Gomes Gouveia</i> | Study of X-Ray Fluorescence Using Monte Carlo Simulation   |
| P8  | <i>Anderson de Oliveira</i>              | Attenuation and Scattering for Breast Tissue in Myocardial Perfusion Spect: Monte Carlo Simulation   |
| P9  | <i>Josep Sempau</i>                      | Simulation of the response of ionization chambers with the Monte Carlo code PENELOPE   |
| P10   | <i>Sielso Bonzoumet Pereira Junior</i>   | Monte Carlo Estimation of Deposited Energy in Oral Cavity During Dental Radiography  |
| P11   | <i>Rafael Miró</i>                       | MCNP Simulation of a Theratron 780 Radiotherapy Unit   |
| P12   | <i>Ademir Xavier da Silva</i>            | Estimating X-Ray Spectra of a Linear Accelerators Beams Using Monte Carlo Simulation   |
| P13   | <i>Daniela Gugiu</i>                     | Monte Carlo Estimation of the Dose and Heating of Cobalt Adjuster Rods Irradiated in the CANDU 6 Reactor Core                                |
| P14   | <i>Natalia Alegria Gutiérrez</i>         | Calculate the store house worker dose in a lost wax foundry using MCNP-4C  |
| P15   | <i>Luís Miguel Cabeça Marques</i>        | Characterization of Neutron Beams Available at the RPI Using a Set of Bonner Spheres   |
| P16   | <i>Andrea Borio di Tigliole</i>          | Radiation Damage Evaluation and Nuclear Parameters Measurements of Industrial Materials  |
| P17   | <i>Andrew Cooper</i>                     | Efficient heterogeneous execution of Monte Carlo Shielding Calculations on a 'Beowulf' Cluster   |
| P18   | <i>Petr A. Androsenko</i>                | Probabilistic characteristics of the next collision estimate in solving transport problems by Monte Carlo method                             |
| P19   | <i>James R. Bland</i>                    | The Importance of Using Mesh Tallies as an Aid For Radiation Field Evaluations   |
| P20   | <i>Noriaki Nakao</i>                     | MARS14 Monte Carlo Simulation for the Shielding Studies of the J-PARC 3 GeV Ring (revised abstract)  |
| P21   | <i>Kenneth William Burn</i>              | Shielding Calculations for a 100 MeV 30mA Proton Beam  |
| P22   | <i>Susanna Guatelli</i>                  | A GEANT4 radiation shielding study in the AURORA project   |
| P23   | <i>Luca Zanini</i>                       | Radioprotection calculations for MEGAPIE   |
| P24   | <i>Franz Gallmeier</i>                   | A Photoabsorption Cross Section Model for the Physics Models Regime in MCNPX   |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

### Wednesday, 12<sup>th</sup> May, 2004

#### Plenary Session (A)

##### *Challenging Projects*

|                    |                         |  |
|--------------------|-------------------------|--|
| <b>I1</b><br>08:30 | <i>Franz Gallmeier</i>  | The Spallation Neutron Source (SNS) Project:<br>A Fertile Ground for Radiation Protection and Shielding Challenges |
| <b>I2</b><br>09:00 | <i>Shun-ichi Tanaka</i> | High Intensity Proton Accelerator Project in JAPAN (J-PARC)  |
| <b>I3</b><br>09:30 | <i>Hamid Abderrahim</i> | The European ADS initiative  |
| 10:00 – 10:20      | <b>Coffee Break</b>     |  |

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ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

**Wednesday, 12<sup>th</sup> May, 2004**

10:20 — 12:20

| <b>Session 12-1 – High Energy Accelerators –I (A)</b><br><b>Chairs: Irena Gudowska; Nikolai Mokhov</b> |                           |   | <b>Session 17-1 – Shielding in Space I - Ground-based measurements and calculations(CR)</b><br><b>Chairs: William Atwell; Hiroshi Iwase</b> |                              |  | <b>Session 15-2 – Radiation Detection and Measurement-- Development of new detection systems (N)</b><br><b>Chairs: Vaclav Vylet; Stefano Agosteo</b> |                           |   |
|--|---------------------------|---|---|------------------------------|--|--|---------------------------|---|
| <b>O1</b><br>10:20   | <i>Nikolai V. Mokhov</i>  | Recent Enhancements to the MARS Code                        | <b>O1</b><br>10:20  | <i>Lawrence W. Townsend</i>  | NASA Space Radiation Transport Code Development Consortium                               | <b>O1</b><br>10:20   | <i>F. d'Errico</i>        | Status of radiation detection with superheated emulsions.   |
| <b>O2</b><br>10:40   | <i>Nikolai V. Mokhov</i>  | Towards a Heavy-Ion Transport Capability in the MARS Code   | <b>O2</b><br>10:40  | <i>Stephen B. Guetersloh</i> | Studies of Heavy-ion Transport Through Candidate Spacecraft Shielding Materials          | <b>O2</b><br>10:50   | <i>Albrecht Leuschner</i> | The boron-12 counter: an active dosimeter for high energetic neutrons   |
| <b>O3</b><br>11:00   | <i>H. Grady Hughes</i>    | MCNP5 for Proton Radiography                                | <b>O3</b><br>11:00  | <i>Richard Maurer</i>        | High Energy Neutron Spectra from 200-500 MeV Proton Collisions with Spacecraft Materials | <b>O3</b><br>11:10   | <i>V. Bolyatko</i>        | Developing instruments for measurement of plutonium activity in the environmental samples in case of radiation accident                       |
| <b>O4</b><br>11:20   | <i>Stepan Mashnik</i>     | Recent Developments in LAQGSM                               | <b>O4</b><br>11:20  | <i>Lawrence Townsend</i>     | HETC Radiation Transport Code Development for Cosmic Ray Shielding Applications in Space | <b>O4</b><br>11:30   | <i>Robert Alan Price</i>  | Energy and angular anisotropy optimisation of a p-type diode for in vivo dosimetry in photon-beam radiotherapy                                |
| <b>O5</b><br>11:40   | <i>Lawrence S. Pinsky</i> | The Application of FLUKA to Dosimetry and Radiation Therapy | <b>O5</b><br>11:40  | <i>Lawrence Heilbronn</i>    | Overview of secondary neutron production relevant to shielding in space                  | <b>O5</b><br>11:50   | <i>Loïc de Carlan</i>     | New method of voxel phantom creation: application for whole body counting calibration and perspectives in individual internal dose assessment |
| <b>O6</b><br>12:00   | <i>Maria Grazia Pia</i>   | Precision validation of Geant4 electromagnetic physics      |   |                              |  |  |                           |   |
| <b>Lunch</b>   |                           |   |   |                              |  |  |                           |   |

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ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

**Wednesday, 12<sup>th</sup> May, 2004**

13:45 – 15:45

| <b>Session 15-3 - Radiation Detection and Measurement - Detector characterization (N)</b><br><b>Chairs: Francesco d'Errico; Stefano Agosteo</b> |                         |   | <b>Session 11-3 – New Technologies in Medical Applications of Radiation (A)</b><br><b>Chairs: Larry Pinsky; Wayne Newhauser</b> |                          |  | <b>Session 17-2 – Shielding in Space II - In-situ measurements and calculations (CR)</b><br><b>Chairs: Stephen Guetersloh; Lawrence Heilbronn</b> |                          |   |
|---|-------------------------|---|---|--------------------------|--|---|--------------------------|---|
| <b>O1</b><br>13:45  | <i>Laurence Miller</i>  | Modelling of Composite Neutron Scintillators  | <b>O1</b><br>13:45  | <i>Kimiaki Saito</i>     | Dose Calculation System for Remotely Supporting Radiotherapy   | <b>O1</b><br>13:45  | <i>Maria Ionica</i>      | Absorbed Dose Rates Due to Protons, Leptons and Helium Measured with AMS Experiment during STS-91 Mission |
| <b>O2</b><br>14:05  | <i>Christian Theis</i>  | Characterization of Ionisation Chambers in a Mixed Radiation Field and Investigation of Their Application as Radiation Monitors for the LHC | <b>O2</b><br>14:05  | <i>Katsumi Hayashi</i>   | Development of Simple Method to Evaluate Medical Staff Radiation Dose and its Application to Supporting Software System for PET Facility Operation | <b>O2</b><br>14:05  | <i>William Atwell</i>    | A reassessment of Galileo Radiation Exposures in the Jupiter Magnetosphere                                |
| <b>O3</b><br>14:25  | <i>S. Taniguchi</i>     | Measurements of the Response Functions of a Large Size NE213 Organic Liquid Scintillator for Neutrons up to 800 MeV                         | <b>O3</b><br>14:25  | <i>Charles A. Wemple</i> | MINERVA: A Multimodality Plugin-based Radiation Therapy Treatment Planning System  | <b>O3</b><br>14:25  | <i>Premkumar Saganti</i> | Radiation Environment at Mars: Particle Flux Shielding in Martian Atmosphere                              |
| <b>O4</b><br>14:45  | <i>Stefano Agosteo</i>  | Performance of a Neutron Spectrometer Based on a PIN Diode  | <b>O4</b><br>14:45  | <i>Luis Peralta</i>      | Clear-PEM: A Dedicated PET Camera for Improved Breast Cancer Detection   | <b>O4</b><br>14:45  | <i>Nikolai Mokhov</i>    | Modeling Radiation Loads to Detectors in a SNAP Space Mission   |
| <b>O5</b><br>15:05  | <i>Stephanie Ménard</i> | Comparison of the Results of Simulations and Experiments Obtained Using a Multi-Element TEPC  | <b>O5</b><br>15:05  | <i>Fred Mettler</i>      | Training for Users of Medical Radiation  | <b>O5</b><br>15:05  | <i>Frantisek Spurný</i>  | Some Recent Measurements Onboard Spacecraft with the Spectrometer of Linear Energy Transfer               |
|   |                         |   | <b>O6</b><br>15:25  | <i>Jonas Fontenot</i>    | Design Tools for Proton Therapy Nozzles Based on the Double-Scattering Foil Technique  | <b>O6</b><br>15:25  | <i>Wes Hines</i>         | SPE Dose Prediction Using Locally Weighted Regression   |
| <b>15:45 — 20:00 SOCIAL PROGRAMME</b>   |                         |   |   |                          |  |   |                          |   |

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**Wednesday, 12<sup>th</sup> May, 2004**

**POSTER SESSIONS**

**10:20 – 15:45**

**(NH)**

| <b>Session<br/>P1 - Accelerator Shielding</b> |                           |  |
|---|---------------------------|--|
|   | <b>Submitting Author</b>  | <b>Title</b>   |
| <b>P1</b>                                     | <i>Ademir X. Da Silva</i> | The Licensing Process of Fifteen Medical Linear Accelerators in Brazil   |
| <b>P2</b>                                     | <i>Robert Metzger</i>     | Ford Motor Company NDE Facility Shielding Design   |
| <b>P3</b>                                     | <i>Rong-Jiun Sheu</i>     | Radiation Safety Impact for Top-Up Operation at the NSRRC  |
| <b>P4</b>                                     | <i>Shiang-Huei Jiang</i>  | Calculations of Neutron Shielding Data for Low Energy Proton Accelerators  |
| <b>P5</b>                                     | <i>Myung-Hyun Kim</i>     | Conceptual Design of Shielding Structure for High Beam Proton Accelerator, KOMAC                                       |
| <b>P6</b>                                     | <i>Hajime Nakamura</i>    | Radiation streaming experiment through a labyrinth of the 12GeV proton accelerator facility (2)- TLD remcounter method |
| <b>P7</b>                                     | <i>Norihiro Matsuda</i>   | Radiation streaming experiment through a labyrinth of the 12GeV proton accelerator facility (1) - Activation method    |
| <b>P8</b>                                     | <i>Toshinobu Sasa</i>     | Shielding analysis at the upper section of the accelerator-driven system   |
| <b>P9</b>                                     | <i>Young-Sik Cho</i>      | Shielding Design Calculations for Beam Dump Facility of KOMAC  |
| <b>P10</b>                                    | <i>Franz Gallmeier</i>    | Prediction of the Activation of the Main SNS Neutron Beam Line Shutters  |

| <b>Session<br/>P2 - Activation and Induced Radioactivity</b> |                          |  |
|--|--------------------------|--|
|  | <b>Submitting Author</b> | <b>Title</b>   |
| <b>P1</b>  | Arturas Smaizys          | Modelling of Activation Processes for the GR-280 Graphite at Ignalina NPP  |
| <b>P2</b>  | Masahiko Korosawa        | Evaluation of induced radioactivity in structural material of Toshiba Training Reactor TTR1                                    |
| <b>P3</b>  | Michael Wohlmuther       | Activation calculations for the target of a Spallation Ultracold Neutron Source at PSI   |
| <b>P4</b>  | Yoshihiro Asano          | Comparison of Thermal Neutron Distributions within Shield Materials Between experiments, SN, and Monte Carlo Code calculations |
| <b>P5</b>  | Henri-Patrick Jacquet    | Activation Analysis and Occupational Dose Rates Estimates for the LMJ facility   |
| <b>P6</b>  | Laurent Bindel           | DECADE, an Engineering Oriented Activation Code  |

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ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

**Thursday, 13<sup>th</sup> May, 2004**

8:30— 10:30

| <b>Session 12-5 – High Energy Accelerators –II (A)</b><br>Chairs: <i>Grady Hughes; Nikolai Mokhov</i> |                          |  | <b>Session 25-1 – Aircraft Dosimetry Issues* (CR)</b><br>Chairs: <i>Keran O'Brien; Stefan Roesler</i> |                             |  | <b>Session 10-1 – Industrial Applications of Radiation (N)</b><br>Chairs: <i>Nisy Ipe; Enrico Sartori</i> |                           |  |
|---|--------------------------|--|---|-----------------------------|--|---|---------------------------|--|
| <b>O1</b><br>08:30  | <i>Sergei Striganov</i>  | On Theory and Simulation of Multiple Coulomb Scattering of Heavy Particles                 | <b>O1</b><br>08:30  | <i>R. Beaujean</i>          | Measurements of Radiation Exposure Onboard Civil Aircraft  | <b>O1</b><br>08:30  | <i>Nisy E. Ipe</i>        | A Cargo Inspection System Based on Pulsed Fast Neutron Analysis (PFNA)                         |
| <b>O2</b><br>08:50  | <i>Nikolai V. Mokhov</i> | Parallelizing the MARS Code with MPI for Shielding Applications                            | <b>O2</b><br>08:55  | <i>Frantisek Spurný</i>     | Aircrew Dosimetry by Means of Experimental Measurements and Calculation. Results obtained during 2003 Year   | <b>O2</b><br>08:50  | <i>Nisy E. Ipe</i>        | An Airport Cargo Inspection System Based on Thermal Neutron Analysis (TNA)                     |
| <b>O3</b><br>09:10  | <i>Jeffrey S. Bull</i>   | Proton Radiography Applications with MCNP5   | <b>O3</b><br>09:15  | <i>Juan Azorin</i>          | In-flight Thermoluminescent Dosimetry Aboard Civil Aircrafts in Mexico   | <b>O3</b><br>09:10  | <i>Shiang-Huei Jiang</i>  | Evaluation of the Dose Rate Distribution For an Air-Type Co-60 Irradiation Facility            |
| <b>O4</b><br>09:30  | <i>Stepan Mashnik</i>    | Extension of the CEM2k and LAQGSM Codes to Describe Photo-Nuclear Reactions                | <b>O4</b><br>09:35  | <i>L.G.I. Bennett</i>       | Aircrew Dosimetry Using the Predictive Code for Aircrew Radiation Exposure (PCAIRE)  | <b>O4</b><br>09:30  | <i>Clovis A. Hazin</i>    | Application of Mathematical Filters for Image Treatment in Digital Radiography                 |
| <b>O5</b><br>09:50  | <i>Irena Gudowska</i>    | Simulation of secondary particle production and absorbed dose to tissue in light ion beams | <b>O5</b><br>09:55  | <i>Sofia Rollet</i>         | Fluka Simulation of TEPC Response to Cosmic Radiation  | <b>O5</b><br>09:45  | <i>Monica Pellicciari</i> | A Very Low Background Gamma-Ray Counting Facility in the Baradello Underground Laboratory      |
| <b>O6</b><br>10:10  | <i>Jeffrey S. Bull</i>   | Magnetic Field Tracking with MCNP5   | <b>O6</b><br>10:20  | <i>Maurizio Pelliccioni</i> | An Aircraft Mathematical Model for the Evaluation of Structure Shielding on the Aircrew Exposure   | <b>O6</b><br>10:00  | <i>Delson Braz</i>        | Using Computed Tomographic System to Study the Steel Fibre Reinforced Concrete Using in Paving |
|   |                          |  | <b>O7</b><br>10:45  | <i>Silvia Paganini</i>      | Fluence to effective dose conversion coefficients calculated for high energy neutron with voxel anthropomorphic phantom MAX coupled with Monte Carlo code GEANT4 | <b>O7</b><br>10:15  | <i>Alfred Hogenbirk</i>   | Locating fluid levels behind a steel hull: a neutron backscatter tool in action                |
|   |                          |  | <b>O8</b><br>11:05  | <i>Keran O'Brien</i>        | The Application of the Heliocentric Potential to Aircraft Dosimetry  |   |                           |  |
| <b>Coffee Break</b>   |                          |  |   |                             |  |   |                           |  |

\* Please notice unusual duration.

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

| <b><u>Thursday, 13<sup>th</sup> May, 2004</u></b>   |                             |   |   |                             |  |   |                          |  |
|---|-----------------------------|---|---|-----------------------------|--|---|--------------------------|--|
| 10:50— 12:50  |                             |   |   |                             |  |   |                          |  |
| <b>Session 15-1 – Measurement of radiation fields in space and around particle accelerators (A)</b><br>Chairs: Hans-Georg Menzel; Stefano Agosteo |                             |   | <b>Session 5-1 - Exposure evaluation and radiation protection (N)</b><br>Chairs: Lutz Moritz; Flavia Groppi |                             |  | <b>Session 22-1 - Storage and Transportation of Radioactive Materials I (B)</b><br>Chairs: Enrico Sartori |                          |  |
| <b>O1</b><br>10:50  | <i>M. Silari</i>            | Measurements of radiation fields around high-energy particle accelerators   | <b>O1</b><br>10:50  | <i>Valery Taranenko</i>     | Calculation of absorbed dose for generic terrestrial non-human biota exposed to external photons and electrons   | <b>O1</b><br>10:50  | <i>Ryan J. Hagler</i>    | ISFSI Site Boundary Radiation Dose Rate Analyses   |
| <b>O2</b><br>11:20  | <i>Guenther Reitz</i>       | Space radiation measurement onboard ISS – The DOSMAP experiment   | <b>O2</b><br>11:10  | <i>Bobby E. Leonard</i>     | Adaptive response activation by single cell radiation hits. Implications to nuclear workers  | <b>O2</b><br>11:10  | <i>Isabel Paiva</i>      | Interim Storage of Spent and Disused Sealed Sources: Optimization of External Dose Distribution in Waste Grids, Using MCNPX Code                   |
| <b>O3</b><br>11:40  | <i>P.K. Job</i>             | Neutron fluence measurement in the electron storage rings   | <b>O3</b><br>11:30  | <i>Kenneth A. Van Riper</i> | Application of a sitting MIRD phantom for effective dose calculations  | <b>O3</b><br>11:30  | <i>Arturas Smaizys</i>   | Modeling of the Shielding Capabilities of the Existing Solid Radioactive Waste Storages at Ignalina NPP  |
| <b>O4</b><br>12:00  | <i>Premkumar B. Saganti</i> | Model calculated GCR environment: comparisons with ACE/CRIS   | <b>O4</b><br>11:50  | <i>Miguel Ramos Pascual</i> | Modelling of the mammographic exposure conditions for radiological detriment study. Application to four samples from the Valencian breast cancer screening Programme | <b>O4</b><br>11:50  | <i>Jan Jansen</i>        | External Dose Calculations for a C3-Dump   |
| <b>O5</b><br>12:20  | <i>Helmut Vincke</i>        | Simulation and Measurements of the Response of an Air Ionisation Chamber exposed to a Mixed High-Energy Radiation Field | <b>O5</b><br>12:05  | <i>Sumi Yokoyama</i>        | Characterization of radionuclides formed by high-energy neutron irradiation  | <b>O5</b><br>12:05  | <i>Alexandr Voronkov</i> | Estimating Accident Risk During Storage of Plutonium and Mathematical Modeling Physical Processes During Accidental Situation and Its Consequences |
|   |                             |   | <b>O6</b><br>12:20  | <i>Rick J. Tanner</i>       | Modelling of neutron survey instrument performance and experimental validation of those calculated response data   |   |                          |  |
|   |                             |   | <b>O7</b><br>12:35  | <i>Yu Jong Lee</i>          | Estimation of the anticipated occupational radiation exposure by analytic method   |   |                          |  |
| <b>Lunch</b>  |                             |   |   |                             |  |   |                          |  |

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ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

**Thursday, 13<sup>th</sup> May, 2004**

14:00 — 16:00

| Session 28-1 – <i>Transmutation Issues (CR)</i><br>Chairs: <i>Benoit Giraud</i> |                         |   | Session 11-4 - <i>Brachytherapy and Neutron Capture Therapy (A)</i><br>Chairs: <i>Markus Fitzek; Wayne Newhauser</i> |                        |  | Session 3-1 – <i>Buildup Factor, Albedo and Point Kernel Methods, Penetration and Duct Streaming, Skyshine I - Analytical Methods (N)</i><br>Chairs: <i>Jeff Favorite; David Anderson</i> |                          |   |
|---|-------------------------|---|--|------------------------|--|---|--------------------------|---|
| <b>O1</b><br>14:05  | <i>Hamid Abderrahim</i> | ADS Key Issues for Transmutation purposes   | <b>O1</b><br>14:00   | <i>Firas Mourtada</i>  | Ruthenium-106 Eye Plaque and Proton Radiotherapy for Ocular Melanoma: A Comparative Dosimetric Study                       | <b>O1</b><br>14:00  | <i>J. A. Favorite</i>    | An Inverse Method for Radiation Transport   |
| <b>O2</b><br>14:30  | <i>Benoit Giraud</i>    | Principal concepts of the XADS Designs in the 5th FP  | <b>O2</b><br>14:20   | <i>Laurence Miller</i> | Comparison of Treatment Planning Dose Calculations with Measurements and Monte Carlo Calculations in a RANDO Phantom       | <b>O2</b><br>14:20  | <i>JR Worsham</i>        | The Theoretical Development of Biased Derivatives To Meet Licensing and Safety Criteria       |
| <b>O3</b><br>14:50  | <i>Hamid Abderrahim</i> | MYRRHA, a Pb-Bi Experimental ADS - Specific Approach to Radiation Protection Aspects in the Project | <b>O3</b><br>14:40   | <i>Laurence Miller</i> | Using Microdosimetry to Understand the Clinical Outcomes of Boron Neutron Capture Therapy                                  | <b>O3</b><br>14.40  | <i>Takashi Onda</i>      | Generation of an Improved Data Set of Gamma-ray Buildup Factors by Invariant Embedding Method |
| <b>O4</b><br>15:10  | <i>Alex Mueller</i>     | The PDS-XADS Reference Accelerator and its radiation protection issues                              | <b>O4</b><br>15:00   | <i>José Ródenas</i>    | Application of the Monte Carlo method to dose assessment for a Brachytherapy treatment scenario using an HDR Ir-192 source | <b>O4</b><br>15:00  | <i>Christophe Suteau</i> | An Iterative Method For Calculating Gamma-Ray Buildup Factors In Multilayer Shields           |
| <b>O5</b><br>15:30  | <i>George Imel</i>      | The Potential Role of Accelerator Driven Systems in the United States                               | <b>O5</b><br>15:20   | <i>Jeremy Sweezy</i>   | The Conceptual Use of Moderating Material to Achieve Boron Neutron Capture Enhanced Fast Neutron Therapy                   |   |                          |   |
| <b>O6</b><br>15:50  | <i>P. Seltborg</i>      | The investigation of the Radiation Field of the Experimental Subcritical Assembly in Dubna          | <b>O6</b><br>15:40   | <i>Elisabetta Nava</i> | Monte Carlo Optimization of a BNCT Facility for treating Brain Gliomas at the TAPIRO Reactor                               |   |                          |   |
| <b>Coffee Break</b>   |                         |   |  |                        |  |   |                          |   |

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ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

**Thursday, 13<sup>th</sup> May, 2004**

16:20 — 18:20

| <b>Session 27-1 - Hybrid and Variance Reduction Methods and Their Applications (A)</b><br><b>Chairs: Osomu Sato; Ali Haghghat</b> |                            |   | <b>Session 24-1 – Special Topics (B)</b><br><b>Chairs:</b> |                         |   |
|---|----------------------------|---|--|-------------------------|---|
| <b>O1</b><br>16:20  | <i>Osamu Sato</i>          | Comparison of Automatic Variance Reduction Techniques with Adjoint Solutions of Two- and Three-Dimensional Discrete Ordinate Calculations for Monte Carlo Calculations of the Spent Fuel Cask Shielding | <b>O1</b><br>16:20   | <i>Norbert Tesch</i>    | Design Studies for an 18 MW Beam Dump at the Future Electron Positron Linear Collider TESLA   |
| <b>O2</b><br>16:40  | <i>Masaki Ohmura</i>       | Performance of the Improved Version of Monte Carlo Code A3-MCNP for Large-Scale Shielding Problems  | <b>O2</b><br>16:40   | <i>Yican Wu</i>         | Fusion-Fission Hybrid Evaluated Nuclear Data Library (HENDL-1) and Its Application for the Fusion-Driven Sub-critical Systems           |
| <b>O3</b><br>17:00  | <i>Marko Maučec</i>        | Variance-Reduction Techniques for Monte Carlo Nuclear Logging Calculations with Neutron Sources   | <b>O3</b><br>17:00   | <i>Jean Galy</i>        | Gamma-DOSE: a User Friendly Module for Dosimetry and Shielding Calculations   |
| <b>O4</b><br>17:20  | <i>Bryan Broadhead</i>     | Effective Biasing Schemes for Duct Streaming Problems   | <b>O4</b><br>17:20   | <i>Gumersindo Verdú</i> | Declassification of Radioactive Liquid Wastes Generated in Radioimmunoassay (RIA) Laboratories  |
| <b>O5</b><br>17:35  | <i>Jeremy Sweezy</i>       | Automated Variance Reduction for MCNP5 using Deterministic Methods  | <b>O5</b><br>17:40   | <i>Katerina Tsoulou</i> | Radiation Studies of Single Event Upsets in the RF Electronics of the LHC Cavities, Produced from Beam Gas Collisions in the IP4 Region |
| <b>O6</b><br>17:50  | <i>Edmund Shuttleworth</i> | Revised Methods for Adjoint Calculations  | <b>O6</b><br>18:00   | <i>Richard Haley</i>    | Criticality Incident Detection Assessment Methodology   |
| <b>O7</b><br>18:05  | <i>Masahiko Kurosawa</i>   | TORT/MCNP Coupling Method for Calculation of Neutron Flux Around a Core of BWR  |  |                         |   |

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ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

**Thursday, 13<sup>th</sup> May, 2004**

16:20 — 18:20

| <b>Session 3-2 – Buildup Factor, Albedo and Point Kernel Methods, Penetration and Duct Streaming, Skyshine II (N)</b><br>Chairs: <i>Nolan Hertel; David Anderson</i> |                                  |   | <b>Session 19-1 - Shielding Experiments (CR)</b><br>Chairs: <i>Takashi Nakamura; Ivan Kodeli</i> |                          |  |
|--|----------------------------------|---|--|--------------------------|--|
| <b>O1</b><br>16:20   | <i>Nolan E. Hertel</i>           | A Comparison of Skyshine Computational Methods  | <b>O1</b><br>16:20   | <i>Takashi Nakamura</i>  | Recent Experimental Works on High Energy Neutron Shielding - Review  |
| <b>O2</b><br>16:40   | <i>Yican Wu</i>                  | Monte Carlo analyses of radiation skyshine and groundshine from a D-D Tokamak   | <b>O2</b><br>16:50   | <i>Noriaki Nakao</i>     | Establishment of High Energy Neutron Irradiation Facility and Shielding Experiment using 4m Concrete Shield at KENS                                |
| <b>O3</b><br>17:00   | <i>Masahiko Kurosawa</i>         | Skyshine Analysis Using Energy and Angular Dependent Dose-Contribution Fluxes Obtained From Air-Over-Ground Adjoint Calculation | <b>O3</b><br>17:10   | <i>Anatoly I. Saukov</i> | Neutron and Photon Leakage Spectra Measurement from Spherical and Hemispherical Samples with a Central Neutron Source as a Possible Benchmark Type |
| <b>O4</b><br>17:20   | <i>Ian R Terry</i>               | Skyshine Benchmark Experiment Revisited   | <b>O4</b><br>17:30   | <i>Nolan E. Hertel</i>   | Integral Measurement of the Low-Energy Tail of a Spallation Neutron Source Using Moderated Foil-Activation Techniques                              |
| <b>O5</b><br>17:40   | <i>Michinori Yamauchi</i>        | Experiment and Analyses for 14 MeV Neutron Streaming through Dogleg Duct  | <b>O5</b><br>17:50   | <i>Ivan Kodeli</i>       | Radiation Shielding and Dosimetry Experiments Updates in the SINBAD Database   |
| <b>O6</b><br>18:00   | <i>Miguel A. Avila-Rodriguez</i> | Simulation of Medical Electron Linac Bremsstrahlung Beam Transport in Typical Shielding Materials                               |  |                          |  |

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**Thursday, 13<sup>th</sup> May, 2004**

**POSTER SESSIONS**

|                               |   |  |
|-------------------------------|---|--|
| <b>Session</b>                |   |  |
| <b>P18 – Shielding Design</b> |   |  |
| <b>14:00 - 18:20 (NH)</b>     |   |  |
|                               | <b>Submitting Author</b>                  | <b>Title</b>   |
| <b>P1</b>                     | <i>Beatriz Lamela Pascua</i>              | Shielding Designs from Cofrentes NPP (Spain)   |
| <b>P2</b>                     | <i>Graciete Simões de Andrade e Silva</i> | Shielding Calculations and Measurements for the BNCT Research Facility at the IEA-R1 Reactor   |
| <b>P3</b>                     | <i>António Falcão</i>                     | MCNP simulation to optimize in-pile and shielding components of the Portuguese SANS instrument |
| <b>P4</b>                     | <i>Andrew Cooper</i>                      | The Shielding Design Process, New Plants to Decommissioning                                    |
| <b>P5</b>                     | <i>Michele Sutton Ferenci</i>             | Shielding Effectiveness of a 15 MV Medical Accelerator's Hinged Door                           |
| <b>P6</b>                     | <i>Jae Woo Park</i>                       | Radiation Shielding Design for the 10,000Ci Co-60 Irradiation Facility                         |
| <b>P7</b>                     | <i>Serguei Urusov</i>                     | Concrete waterproofing in nuclear industry   |

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| <b>Session</b>   |                            |   |
| <b>P22 - Transportation and Storage of Radioactive Materials</b> |                            |   |
| <b>14:00 - 18:20 (NH)</b>  |                            |   |
|  | <b>Submitting Author</b>   | <b>Title</b>  |
| <b>P1</b>  | <i>Eduard F. Kryuchkov</i> | Modeling of Radiation Field Around Spent Fuel Container |

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| <b>Session</b>                          |                            |   |
| <b>P13 – Nuclear Data for Shielding</b> |                            |   |
| <b>14:00 – 18:20 (NH)</b>               |                            |   |
|   | <b>Submitting Author</b>   | <b>Title</b>  |
| <b>P1</b>                               | <i>Klaus H. Guber</i>      | Neutron Cross-Section Measurements at ORELA for Improved Nuclear Data and their Application   |
| <b>P2</b>                               | <i>Bhaskar Mukherjee</i>   | NEA-1694 SATIF/CYCLO-RADSAFE: A Database on Health Physics and Radiological Safety of Cyclotrons 10-250 MeV   |
| <b>P3</b>                               | <i>Aleksander Polanski</i> | Comparison of Pion Cross Section Parameterization Methods for Medium and High Energies  |
| <b>P4</b>                               | <i>Robert C. Block</i>     | Hafnium Resonance Parameter Analysis Using Neutron Capture and Transmission Experiments   |
| <b>P5</b>                               | <i>Yury Titarenko</i>      | Theoretical Excitation Functions of Products from Pb-208, -207, -206, -nat and Bi-209 (p,x) Reactions Compared with Recent Measurements at Intermediate and High Energies |

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## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|  |                          |   |
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| <b>Session</b><br><b>P23 – Visualization and User Interfaces</b><br><p style="text-align: center;"><b>14:00 – 18:20 (NH)</b></p> |                          |   |
|  | <b>Submitting Author</b> | <b>Title</b>  |
| <b>P1</b>  | Yukiharu Ohga            | A System for Calculation and Visualization of Radiation Field for Maintenance Support in Nuclear Power Plants |
| <b>P2</b>  | Marco Sumini             | GENII-LIN: a New Object-Oriented Interface for the GENII Code   |

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| <b>Session</b><br><b>P11 – Medical Applications of Radiation</b><br><p style="text-align: center;"><b>14:00 – 18:20 (NH)</b></p> |  |   |
|  | <b>Submitting Author</b>               | <b>Title</b>  |
| <b>P1</b>  | <i>Luiz Flávio Kalil Telles</i>        | A Mathematical and Computational Method to Optimizes the Percentage Depth Dose Distributions Using Combination of Two Electron Curves |
| <b>P2</b>  | <i>Oleg Yuminov</i>                    | <sup>211</sup> At α-emitter in isotonic solution as a valuable tool for radiational cancer therapy                                    |
| <b>P3</b>  | <i>R. Felici</i>                       | MOSFET detector response simulation with EGS4 in the case of an x-ray microbeams array used for radiation therapy                     |
| <b>P4</b>  | <i>Augusto Manuel Dias de Oliveira</i> | Cellular dosimetry studies in targeted radiotherapy   |
| <b>P5</b>  | <i>Maria Neves</i>                     | Potential Radionuclides for Targeted Radiotherapy   |
| <b>P6</b>  | <i>Maria Filomena Botelho</i>          | Modulated Radioliposomes as Lung Lymphatic Tracers  |
| <b>P7</b>  | <i>Durval C. Costa</i>                 | In vivo radiopharmacology of the central dopaminergic system: clinical utility in dementia and movement disorders                     |
| <b>P8</b>  | <i>Fernanda Marujo Marques</i>         | Radiopharmaceuticals for targeted radiotherapy. Synthesis, radiolabelling, and biological evaluation                                  |
| <b>P9</b>  | <i>Nicola Cerullo</i>                  | Preliminary design of a Gd-NCT neutron beam based on compact D-D and D-T neutron source   |
| <b>P10</b>   | <i>Milan Marek</i>                     | Neutron and Photon Field in the BNCT Room with Closed Beam Shutters   |
| <b>P11</b>   | <i>Shiang-Huei Jiang</i>               | Effective Dose Evaluation for Chest X-ray Test  |
| <b>P12</b>   | <i>Francisco Rodenas Escriba</i>       | A comparative study of computer assisted assessment of image quality index for different mammographic phantoms                        |
| <b>P13</b>   | <i>Nuno Machado</i>                    | Results of Radiation Protection Programs on Mammography   |
| <b>P14</b>   | <i>Ademir Xavier da Silva</i>          | Shielding and Photoneutron consideration in Therapeutic Radiation Dose Delivery   |
| <b>P15</b>   | <i>José Ródenas</i>                    | Assessment of mammography spectra using Compton spectrometry techniques   |
| <b>P16</b>   | <i>Tatjana Jevremovic</i>              | The COG Monte Carlo Assessment of the Boron and Gadolinium Neutron Capture Therapy  |

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(NH) – Niemeyer Hall



## ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

### Friday, 14<sup>th</sup> May, 2004

8:30 — 10:30

| <b>Session 12-2 - Electron-Photon Monte Carlo Methods and Applications (A)</b><br>Chairs: <i>Paul Bergstrom; Steve Seltzer</i> |                             |  | <b>Session 1-3- Data and methods for accelerator shielding (CR)</b><br>Chairs: <i>James C. Liu; Young-Ouk Lee</i> |                           |   | <b>Session 22-2 - Storage and Transportation of Radioactive Materials (N)</b><br>Chairs: <i>Enrico Sartori</i> |                                |  |
|--|-----------------------------|--|---|---------------------------|---|--|--------------------------------|--|
| <b>O1</b><br>08:30   | <i>Sophie Chiavassa</i>     | Dosimetric comparison of Monte Carlo codes (EGS4, MCNP, MCNPX) considering external and internal exposures of the Zubal phantom to electron and photon sources | <b>O1</b><br>08:30  | <i>Vladimir Yurevich</i>  | Study of fragment yields, fission reactions and neutron production in lead targets induced by intermediate energy protons               | <b>O1</b><br>08:30   | <i>Daniel Shedlock</i>         | Neutron Analysis of Spent Fuel Storage Installation Using Parallel Computing and Advance Discrete Ordinates and Monte Carlo Techniques |
| <b>O2</b><br>08:50   | <i>Francesc Salvat</i>      | Cross sections for elastic and inelastic interactions of low-energy electrons and positrons with liquid water  | <b>O2</b><br>08:50  | <i>Hiroshi Iwase</i>      | Comparison between calculation and measured data on secondary neutron energy spectra by heavy ion reaction from different thick targets | <b>O2</b><br>08:50   | <i>Olaf Ringleb</i>            | Comparison of Measured and Calculated Dose Rates at the CASTOR HAW 20/28 CG  |
| <b>O3</b><br>09:10   | <i>José Fernández-Varea</i> | A relativistic optical-data model for inelastic interactions of electrons and positrons with condensed matter  | <b>O3</b><br>09:10  | <i>Taichi Miura</i>       | Analysis of Induced Radionuclides in Low-activation Concrete Using 12 GeV Proton Accelerator Facility at KEK                            | <b>O3</b><br>09:10   | <i>Cristina Alice Margeanu</i> | Monte Carlo Methods Application to CANDU Spent Fuel Analysis   |
| <b>O4</b><br>09:30   | <i>Miguel Ramos Pascual</i> | Monte Carlo Image Simulation of a Mammographic Phantom in the Valencian Breast Cancer Screening Program (VBCSP)  | <b>O4</b><br>09:30  | <i>Hee-Seock Lee</i>      | Angular Distribution Measurements of Photo-Neutron Yields Produced by 2.0 GeV Electrons incident on Thick Targets                       | <b>O4</b><br>09:30   | <i>Gábor Hordosy</i>           | Gamma Shielding Calculations for WWER-440 Spent Fuel Transport Cask by Detailed Fuel Modeling Using MCNP                               |
| <b>O5</b><br>09:45   | <i>Delson Braz</i>          | Evaluation of Secondary Radiation From Gd <sub>2</sub> O <sub>2</sub> Si:Tb Intensifying Screen By Experimental Data And Monte Carlo Simulation                | <b>O5</b><br>09:50  | <i>James C. Liu</i>       | Comparison of synchrotron radiation calculations between analytic codes (STAC8, PHOTON) and Monte Carlo codes (FLUKA, EGS4)             | <b>O5</b><br>09:45   | <i>Victor Bolyatko</i>         | Fuzzy – Probabilistic Model for Risk Assessment of Radioactive Material Railway Transportation   |
| <b>O6</b><br>10:00   | <i>Gumersindo Verdú</i>     | Heterogeneity Influence Study in Dosimetry in Skin Cancer Treatment Using Leipzig Applicators  | <b>O6</b><br>10:10  | <i>Ademir X. Da Silva</i> | Neutron Scattering Factors for Concrete and Wood  | <b>O6</b><br>10:00   | <i>Alexander Gerasimov</i>     | Transmutation of Actinides in Power Reactors   |
| <b>O7</b><br>10:15   | <i>Xavier Llovet</i>        | Review of inner-shell ionization cross sections by electron and positron impact  |   |                           |   |  |                                |  |
| <b>Coffee Break</b>  |                             |  |   |                           |   |  |                                |  |

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ICRS-10 / RPS 2004 Conferences –Schedule of the Sessions

|   |                                    |   |
|---|------------------------------------|---|
| <p><b><u>Friday, 14<sup>th</sup> May, 2004</u></b><br/> <b><i>Closing Plenary Session</i></b><br/> <b>(A)</b></p> |                                    |   |
| <p><b>I1</b><br/>10:50</p>  | <p><i>Alireza Haghighat</i></p>    | <p>Advancement in Particle Transport Methods and Future Needs and Directions</p>          |
| <p><b>I2</b><br/>11:20</p>  | <p><i>Francesco d'Errico</i></p>   | <p>Future Trends in Radiation Detection Techniques</p>                                    |
| <p><b>I3</b><br/>11:50</p>  | <p><i>Lawrence Townsend</i></p>    | <p>Implications of the Space Radiation Environment on Human Exploration in Deep Space</p> |
| <p><b>I4</b><br/>12:20</p>  | <p><i>J.J. Pedroso de Lima</i></p> | <p>New Trends in Medical Imaging</p>  |

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