



# ANIMMA 2009

**June 7-10, 2009**

INTERNATIONAL CONFERENCE

Marseille Convention Center,  
Palais des Congrès, Parc Chanot,  
Marseille, France

S C I E N T I F I C  
P R O G R A M

Advancements in Nuclear Instrumentation, Measurement Methods and their Applications

## Welcome and Opening addresses

### Oral presentations in plenary session

Room: **Callelongue**

Chaired by **André CHABRE** (CEA/DEN, FR)




08:40	<b>Mr. André CHABRE</b> (CEA/Nuclear Energy Division, FR), General Chairman (10'): Conference Opening
	<b>Pr. Abdallah LYOUSSI</b> (CEA/Nuclear Energy Division, FR), Chairman of the Organizing Committee (10'): Information on Conference Progress
	<b>Dr. Loïck MARTIN-DEIDIER</b> (Deputy Head of CEA / Nuclear Energy Division, FR) (10'): R&D on Nuclear Instrumentation at the CEA.
	<b>Pr. Jean-Paul CAVERNI</b> (President of University of Provence, FR) (10') Research and Education on Instrumentation at University of Provence
	<b>Pr. Franck DECONINCK</b> (President of the SCK • CEN, BE) (10'): Recent Developments in Instrumentation for Nuclear Imaging
09:30	<b>Dr. Catherine CESARSKY</b> (CEA/High Commissioner for Atomic Energy, FR) (25'): From Nuclear Instrumentation to the Discovery of the Cosmos
	<b>Dr. Jorgen KJEMS</b> (Chair of the Physical Science and Engineering Working Group ESFRI, DK) (25'): ESFRI Roadmap 2008 and the Perspectives for Large Nuclear Research Infrastructures in Europe
10:20 - 10:40	Coffee Break

## Session 1.1 : Measurement and Detection Methods in Fundamental Physics (Nuclear Physics and Physics of Particles)

Oral presentations in parallel sessions

Room: **Callelongue**

Chaired by **Pr. Eric KAJFASZ** (CNRS/IN2P3-CPPM Marseille, FR)

10:40 - 11:20	<b>(#2) Invited Lecture: Michel SPIRO</b> (CNRS/IN2P3, FR) Measurement and Detection Methods in Fundamental Physics (Nuclear Physics and Particle Physics) 
11:20 - 11:40	<b>(#21) J. ABDALLAH</b> (Institut de Fisica d'Altes Energies, ES) ATLAS Tile Calorimeter Commissioning and Performance  <i>The ATLAS Tile collaboration</i>
11:40 - 12:00	<b>(#48) I. MANDIC</b> (Jozef Stefan Institute, SI) Online Radiation Dose Measurement System for ATLAS Experiment  <i>I. Mandić, V. Cindro, A. Gorišek, G. Kramberger, M. Mikuž, J. Hartert, J. Bronner, S. Franz</i>

12:00 - 12:20	<b>(#50) M. MIÑANO</b> (Instituto de Fisica Corpuscular, ES) Characterization of P-type Silicon Detectors Under Neutron Irradiation Expected for Super LHC <i>M. Miñano, C. Fleta, C. García, C. Lacasta, M. Lozano, R. Marco, S. Martí i García, G. Pellegrini, U. Soldevila, M. Ullán</i>	
12:20 - 12:40	<b>(#265) P. LEDU</b> (CNRS/IN2P3-IPN Lyon, FR) ATCA/ $\mu$ TCA for Large Instruments <i>R. Larsen, R. Downing, C. Saunders, V. Pavlicek, T. Jezynski, K. Rehlich, Z. An Liu, M. Nomachi, P. Le Du, on behalf of the "XTCA for Physics Standards Collaboration"</i>	
Room: <b>Morgiou</b> Chaired by <b>Pr. Yvan BRUYNSEAEDE</b> (K.U. Leuven, BE)		
10:40 - 11:00	<b>(#23) N. BENEKOS</b> (Univ. of Illinois, US) ATLAS Muon Spectrometer Using Cosmic Rays and First Beam Data <i>Benekos Nektarios, Cortes Gonzales Arely, Coggeshall James Christopher, Liss Anthony Michael</i>	
11:00 - 11:20	<b>(#35) G.M. COLLAZUOL</b> (Scuola Normale Superiore-Pisa, IT) Usage of Silicon PhotoMultipliers for the CEDAR Differential Cherenkov Counter in the NA62 Experiment at the CERN SPS. <i>Gian Maria Collazuol on behalf of the NA62 collaboration</i>	
11:20 - 12:00	<b>(#211) Invited Lecture: J. BAUDOT</b> (CNRS/IN2P3-IPHC Strasbourg, FR) A New CMOS Sensor Generation for High Energy Physics and Imaging Application <i>J. Baudot, R. Barbier, G. Bertolone, A. Besson, A. Brogna, E. Chabanat, G. Claus, C. Colledani, P. Depasse, Y. Degerli, R. De Masi, M. Deveaux, A. Dorokhov, G. Dozière, C. Dritsa, W. Dulinski, N. Estre, X.C. Fang, J.C. Fontaine, M. Gelin, M. Goffe, A. Himmi, C. Hu-Guo, K. Jaaskelainen, M. Koziel, F. Morel, F. Orsini, C. Santos, M. Szelezniak, A. Shabetai, M. Specht, Q. Sun, I. Valin, G. Voutsinas, M. Winter</i>	
12:00 - 12:20	<b>(#43) D. HOFFMANN</b> (CNRS/IN2P3-CPPM Marseille, FR) PVSS Data Viewer - An Application to Retrieve and Visualise PVSS Data for LHC <i>D. Hoffmann, O. Pisano</i>	
12:20 - 12:40	<b>(#214) R. ALAMI</b> (CNESTEN, MA) New Developments on Software Tools for Data Acquisition and Numerical Simulation for Gamma-Ray Scanning <i>R. Alami, D. Benchekroun, B. Bensitel, H. Laghyam, Lhiba Sanaa, A. Ouardi</i>	
Room: <b>Sormiou</b> Chaired by <b>Dr. Frédéric MARIE</b> (CEA/DSM, FR)		
10:40 - 11:00	<b>(#42) G. HALLEWELL</b> (CNRS/IN2P3-CPPM Marseille, FR) New Developments of Scintillating Crystal-Based Hybrid Single Photon Detectors (X-HPDs) for Charged Particle and Neutrino Detection Applications <i>I. Al Samarai, J. Busto, B. Combettes, A-G. Dehaine, G. Hallewell</i>	

11:00 - 11:20	<b>(#40) A. FONTANA</b> (INFN, IT) Study of the Performances of HPGe Detectors Operating in Very High Magnetic Fields <i>M. Agnello, E. Botta, T. Bressani, M. Bruschi, S. Bufalino, M. De Napoli, A. Feliciello, A. Fontana, B. Giacobbe, L. Lavezzi, G. Raciti, E. Rapisarda, A. Rotondi, C. Sbarra, C. Sfienti, A. Zoccoli</i>
11:20 - 11:40	<b>(#33) P.-Y. DUVAL</b> (CNRS/IN2P3-CPPM Marseille, FR) Conception and Validation Software Tools for the Level 0 Muon Trigger of LHCb <i>E. Aslanides, J.P. Cachemiche, J. Cogan, P.Y. Duval, F. Hachon, R. LeGac, O. Leroy, P.L. Liotard, F. Marin, A. Tsaregorodtsev</i>
11:40 - 12:00	<b>(#46) Invited Lecture: K. COPIC</b> (Univ. of Columbia, US) Status of the ATLAS Liquid Argon Calorimeter and its Performance from Selected Test Beam Results and Commissioning Data <i>Atlas Liquid Argon Calorimeter Group</i>

## Session 1.2 : Instrumentation and Measurement Methods for Experimental Nuclear Reactors

Oral presentations in parallel sessions

Room: **Callelongue**

Chaired by **Pr. Gordon KOHSE** (MIT, US)

14:00 - 14:40	<b>(#3) Invited Lecture: D. IRACANE</b> (CEA/DEN, FR) Advanced Instrumentation for Experimentations in Material Tests Reactors
14:40 - 15:00	<b>(#112) J. REMPE</b> (INL, US) New Sensors for In-Pile Testing at the ATR NSUF <i>J. Rempe, D. Knudson, K. Condie, J. Daw, H. Ban, B. Fox, G. Kohse, S. C. Wilkins</i>
15:00 - 15:20	<b>(#66) D. SHIPPEN</b> (Univ. of Lancaster, GB) A Wavelet Packet Transform Inspired Method of Neutron-Gamma Discrimination <i>D.I. Shippen, M.D. Aspinall, M.J. Joyce</i>
15:20 - 15:40	<b>(#104) K.N. CHOO</b> (KAERI, KR) Measurement and Evaluation of the Irradiation Test Parameters for a Specimen in a HANARO Material Irradiation Capsule <i>Kee Nam Choo, Bong Goo Kim, Man Soon Cho, Young Ki Kim, Jae Joo Ha</i>
15:40 - 16:00	<b>(#239) H. BREITKREUTZ</b> (TU München, DE) The Beam of Fission Neutrons at FRM II and its Application in Medicine, Biology, and Materials Characterisation <i>F. M. Wagner, H. Breitzkreutz, Th. Bücherl, B. Loeper, W. Petry</i>

Room: **Morgiou**

Chaired by **Pr. Winfried PETRY** (TU München, DE)

14:00 - 14:20	<b>(#227) A. LETOURNEAU</b> (CEA/DSM, FR) Recent Developments on Micrometric Fission Chambers for High Neutron Fluxes <i>Alain Letourneau for the Mini-Inca and Megapie collaborations</i>
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14:20 - 14:40	<b>(#131) W. ITAGAKI</b> (JAEA, JP) In-Vessel Visual Inspection of Experimental Fast Reactor Joyo <i>Takashi Sekine, Kazuyuki Imaizumi, Shigetaka Maeda, Takashi ashida, Misao takamatsu, Akinori Nagai, Yukimoto Maeda</i>
14:40 - 15:20	<b>(#133) Invited Lecture: K. THOMSEN</b> (PSI, CH) Pressure Measurement Based on Thermocouples <i>K. Thomsen</i>
15:20 - 15:40	<b>(#137) S. ZARISTKIY</b> (Kurtchakov Institute, RU) Neutron and Gamma Spectrometry in the Research Reactor LR-0 <i>S.M. Zaritskiy, B. Ošmera, F. Cvachovec, M. Mařík, S. Pošta, D. Riazanov, V. Lichadeev</i>
15:40 - 16:00	<b>(#125) C. JAMMES</b> (CEA/DEN, FR) Research Activities in Fission Chamber Modeling in Support of the Nuclear Energy Industry <i>Ch. Jammes, P. Filliatre, B. Geslot, L. Oriol, F. Berhouet, J-F. Villard</i>

Room: **Sormiou**

Chaired by **Pr. George IMEL** (ISU, US)

14:00 - 14:20	<b>(#237) G. RITTER</b> (CEA/DEN, FR) Neutron Commissioning in the New CABRI Water Loop Facility <i>G. Ritter, O. Guéton, F. Mellier, D. Beretz</i>
14:20 - 14:40	<b>(# 102) P. CASOLI</b> (CEA/DAM, FR) Calculation of Kinetic Parameters of CALIBAN Metallic Core Experimental Reactor from Stochastic Neutron Measurements <i>Casoli Pierre, Authier Nicolas, Baud Jérémie</i>
14:40 - 15:00	<b>(#221) P. BLAISE</b> (CEA/DEN, FR) Application of the Modified Source Multiplication (MSM) Technique to Subcritical Reactivity Worth Measurements in Thermal and Fast Reactor Systems <i>Patrick Blaise, Frederic Mellier, Philippe Fougeras</i>
15:00 - 15:20	<b>(#226) J.L. LECOUEY</b> (CNRS/IN2P3-LPC Caen, FR) Monitoring Fast Neutron Sources For Accelerator Driven Subcritical Reactor Experiments <i>G. Ban, P. Bergonzo, A. Billebaud, R. Brissot, S. Chabod, Ph. Dessagne, J.M. Fontbonne, M. Kerveno, C. Le Brun, F.R. Lecolley, J.F. Lecolley, J.L. Lecouey, E. Liatard, N. Marie, C. Mer, A. Nuttin, M. Pomorski, J.C. Steckmeyer, D. Tromson</i>
15:20 - 16:00	<b>(#240) Invited Lecture: A. ROHRMOSER</b> (TU München, DE) Evaluation of In-Pile Neutron Signals During the Start-up Phase of the FRM II Compact Core <i>Anton Röhrmoser, Winfried Petry</i>
16:00 - 16:20	Coffee Break

## Oral presentations in plenary session

Room: **Callelongue**

16:20 - 17:20	<b>Poster summaries “sessions 1.1 &amp; 1.2”</b> <b>Dr. Gilles BIGNAN</b> (CEA/DEN, FR) & <b>Pr. Yvan BRUYNSEAEDE</b> (K.U. Leuven, BE)
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## Session 1.3 : Nuclear Instrumentation and Measurements for Safety, Environment and Health Applications

Oral presentations in parallel sessions

Room: **Callelongue**

Chaired by **Pr. Denis BERTIN** (Univ. of Provence, FR)

17:20 - 18:00	<b>(#4) Invited Lecture: R. MARCH</b> (Univ. of Trent, CA) Application of Mass Spectrometry and Nuclear Magnetic Resonance to Environmental Problems
18:00 - 18:20	<b>(#271) A. JANULYTE</b> (Univ. of Provence, FR) Calibration and Fluctuation of the Secular Frequency Peak Amplitude Versus Initial Condition Distribution of the Ion Cloud Confined into a Three-Dimensional Quadrupole Ion Trap using a Fourier Transform Operating Mode <i>A. Janulyte, J. Andre, M. Carette, M. Mercury, C. Reynard, Y. Zerega</i>

Room: **Morgiou**

Chaired by **Dr. Massimo MORICHI** (CANBERRA, US)

17:20 - 17:40	<b>(#252) S. LEGOUPIL</b> (CEA/DRT, FR) Recent Progresses in Industrial Tomography <i>Samuel Legoupil, Fanny Buyens, Delphine Lazaro, Alexandre Vabre</i>
17:40 - 18:00	<b>(#249) J. ADAMS</b> (Univ. of Lancaster, GB) Depth Determination of Entrained Caesium-137 and Cobalt-60 Sources Using Scatter Peak Data <i>Jamie C. Adams, Matthew Mellor, Malcolm J. Joyce</i>
18:00 - 18:20	<b>(#54) V. POPOV</b> (TJNAF, US) Precision Environmental Radiation Monitoring System <i>Vladimir Popov, Pavel Degtiarenko</i>
18:45	Bus departure for Cocktail at MARSEILLE Town Hall

## Session 2.1 : Measurement and Detection Methods in Fundamental Physics (Fusion and Plasma Physics)

Oral presentations in parallel sessions

Room: **Callelongue**

Chaired by **Dr. Alan COSTLEY** (Iter Organization, FR)

08:40 - 09:20	<b>(#5) Invited Lecture: A. COSTLEY</b> (Iter Diagnostic Section, FR) Towards Diagnostics for a Fusion Reactor
09:20 - 09:40	<b>(#236) R. REICHLÉ</b> (CEA/DSM, FR) On the Operational Specifications and Associated R&D for the VIS/IR Diagnostic for ITER <i>R. Reichle, E. de la Cal, Y. Corre, M. Davi, A. Manzanares, J.L. de Pablos, R. Vila, S. Salasca, J.M. Traversé</i>
09:40 - 10:00	<b>(#116) P. MOREAU</b> (CEA/DSM, FR) Development of a Magnetic Diagnostic Suitable for the ITER Radiation Environment <i>P. Moreau, A. Le-Luyer, P. Pastor, Ph. Malard, J.B. Lister, J.M. Moret, G. Chitarin, S. Peruzzo, R. Vila, J. Romero, B. Brichard, I. Bolshakova, I. Duran, G. Vayakis</i>
10:00 - 10:20	<b>(#59) R. SABOT</b> (CEA/DSM, FR) Microwave Reflectometry: a Sensitive Diagnostic for Electron Density Property Measurement in Tore-Supra Fusion Plasmas <i>R. Sabot, C. Bottereau, F. Clairet, T. Gerbaud, J.C. Giacalone, P. Hennequin, S. Heuroux, C. Honoré, D. Molina, M. Schubert, L. Vermare, A. Casati, A. Macor, C. Nguyen, E. Trier</i>

Room: **Morgiou**

Chaired by **Dr. Jean-Pierre LEYRAT** (CEA/DAM, FR)

09:00 - 09:20	<b>(#26) M. ANGELONE</b> (ENEA, IT) Neutron Spectroscopy by Means of Artificial Diamond Detectors Using a Remote Read Out Scheme <i>M. Angelone, D. Lattanzi, M. Pillon, S. Almaviva, Marco Marinelli, E. Milani, G. Prestopino, C. Verona, G. Verona-Rinati, G. Aielli, R. Cardarelli, R. Santonico</i>
09:20 - 09:40	<b>(#39) O. FLAMENT</b> (CEA/DAM, FR) Challenges for Embedded Electronics in Systems Used in Future Facilities Dedicated to International Physics Programs <i>O. Flament, J. Baggio, S. Bazzoli, S. Girard, J. Raimbourg, J.L. Leray</i>

09:40 - 10:20	<b>(#68) Invited Lecture: I. THFOIN</b> (CEA/DAM, FR) High Resolution Neutron Imaging for Inertial Confinement Fusion Experiments <i>I. Thfoin, O. Landoas, T. Caillaud, L. Disdier, M. Vincent, J.L. Bourgade, B. Rossé, V. Yu Glebov, T.C. Sangster</i>
10:20 - 10:40	Coffee Break

## Session 2.2 : Instrumentation and Measurement Methods for Nuclear Fuel Cycle

Oral presentations in parallel sessions

Room: **Callelongue**

Chaired by **Pr. Bernard BOULLIS** (CEA/DEN, FR)

10:40 - 11:20	<b>(#6) Invited Lecture: Ph. GARDERET</b> (AREVA-NC, FR)
11:20 - 11:40	<b>(#146) I. ESPAGNON</b> (CEA/DRT, FR) SIGALE, a New Code for Automatically Determining Radionuclide Activities Using CdZnTe Spectrometry <i>I. Espagnon, A. C. Simon, F. Lamadie, C. Mahé</i>
11:40 - 12:00	<b>(#275) J. ROUQUEROL</b> (Univ. of Provence, FR) Sample-Controlled Evolved Gas Analysis : an Efficient Technique to Produce Tailored Uranium Oxide Powder from Hexahydrated Uranyl Nitrate <i>Jean Rouquerol, Françoise Rouquerol, Sylvie Bordere, Philip Llewellyn</i>
12:00 - 12:20	<b>(#264) A. NONELL</b> (CEA/DEN, FR) Application of Collision Reaction-Cell Based MC-ICPMS to In-Situ Interferences Resolution for Isotopic Measurements of Nuclear Fuel Samples <i>A. Nonell, M. Granet, J. Moureau, G. Favre, H. Isnard, F. Chartier</i>
12:20 - 12:40	<b>(#155) A.C. SIMON</b> (CEA/DRT, FR) Determination of Actinides Isotopic Composition: Performances of the IGA Code According to the Experimental Setup <i>A.C. Simon, F. Carrel, I. Espagnon, M. Lemerrier</i>

Room: **Morgiou**

Chaired by **Pr. Abdallah LYOUSSI** (CEA/DEN, FR)

10:40 - 11:00	<b>(#144) F. DE BRUYCKER</b> (EC/ITU, DE) Experimental Studies on Nuclear Fuel at High Temperature and High Pressure Via Laser Heating <i>F. De Bruycker, D. Boboridis, D. Manara</i>
11:00 - 11:20	<b>(#107) G. DUCROS</b> (CEA/DEN, FR) Use of Gamma Spectrometry for Measuring the Fission Product's Release During a Simulated PWR Severe Accident: Application to the VERDON Experimental Programme <i>G. Ducros, S. Bernard, M.P. Ferroud-Plattet, O. Ichim</i>

11:20 - 12:00	<b>(#149) Invited Lecture: K. KATSUYAMA</b> (JAEA, JP) Application of X-Ray Computer Tomography for Observing the Central Void Formations and the Fuel Pin Deformations of Irradiated FBR Fuel Assemblies <i>Kozo Katsuyama, Tsuyoshi Nagamine, Hirotaka Furuya</i>
12:00 - 12:20	<b>(#210) E. BARAT</b> (CEA/DRT, FR) ADONIS: a New Concept of X/Gamma Pulse Analyzer <i>Eric Barat, Thomas Dautremer, Thierry Montagu</i>
12:20 - 12:40	<b>(#242) M. JOYCE</b> (Univ. of Lancaster, GB) The Design, Build and Test of a Digital Analyser for Mixed Radiation Fields <i>M.J. Joyce, M.D. Aspinall, F.D. Cave, Z. Jarrah, K. Georgopoulos</i>

Room: **Sormiou**

Chaired by **Dr. Martyn SWINHOE** (LANL, US)

10:40 - 11:00	<b>(#138) P. BERGONZO</b> (CEA/DRT, FR) Diamond Detectors for Alpha Monitoring In Corrosive Media for Nuclear Waste Monitoring <i>P. Bergonzo, C. Mer, D. Tromson, J. de Sanoit, M. Pomorski</i>
11:00 - 11:20	<b>(#145) S. DOGNY</b> (AREVA-NC, FR) Feedback from the Operation of the ISOCS in Support to the Plutonium Facility Decommissioning Project at the MARCOULE UP1 Reprocessing Plant (France) and Possible Gain for New Projects with New CANBERRA Systems <i>Stéphane Dogny, Hervé Toubon</i>
11:20 - 11:40	<b>(#241) F. CARREL</b> (CEA/DRT, FR) Measurement of Plutonium in Large Concrete Radioactive Waste Packages by Photon Activation Analysis <i>F. Carrel, M. Agelou, M. Gmar, F. Lainé, B. Poumarède</i>
11:40 - 12:00	<b>(#148) G. GRANIER</b> (CEA/DEN, FR) A Methodology to Evaluate the Performances of Software, Using Gamma Spectrometry, for Determining the Isotopic Composition of Plutonium and Uranium <i>G. Granier, J-B. Porcher, N. Pepin, A-C. Simon, B. Benezèche</i>
12:00 - 12:40	<b>(#153) Invited Lecture: A.-C. RAOUX</b> (CEA/DEN, FR) Improvement of the Matrix Effect Compensation in Active Neutron Measurement by Simulated Annealing Algorithm <i>A-C. Raoux, J. Lorida, A. Mariani, C. Passard</i>
12:40 - 14:00	Lunch Break

## Session 2.3 : Safeguards Measurements and Homeland Security

Oral presentations in parallel sessions

Room: **Callelongue**

Chaired by **Dr. Alain PLUQUET** (CEA/DRT, FR)

14:00 - 14:40	<b>(#1) Invited Lecture: R. KOUZES</b> (PNNL, US) Interdiction of Nuclear Threats at Borders <i>Richard T. Kouzes</i>
14:40 - 15:00	<b>(#157) S. AHLEN</b> (Univ. of Boston, US) A Background-Free Direction-Sensitive Neutron Detector <i>Steven Ahlen, Denis Dujmic, Peter Fisher, Andrew Inglis, Hidefumi Tomita, Hermann Wellenstein</i>
15:00 - 15:20	<b>(#161) L. BUTCHINS</b> (Home Office, GB) Is the Holy Grail Plastic? Radiation Identification from Plastic Scintillators <i>L. Butchins, J. Gosling, R. Lacey, J. Stearn, M. Hogbin</i>
15:20 - 15:40	<b>(#176) A. PORTA</b> (CEA/DSM, FR) Reactor Neutrino Detection for Non Proliferation with the NUCIFER Experiment <i>A. Porta, for the Nucifer collaboration</i>
15:40 - 16:00	<b>(#277) V. VALKOVIC</b> (ACTdoo, HR) Environmental Security of the Adriatic Coastal Sea Floor <i>V. Valkovic, J. Obhodas, D. Sudac</i>
Room: <b>Morgiou</b> Chaired by <b>Pr. Martyn SWINHOE</b> (LANL, US)	
14:00 - 14:20	<b>(#162) S. DAZELEY</b> (LLNL, US) Neutron Detection with Water Cerenkov Based Detectors <i>Steven Dazeley, Adam Bernstein, Nathaniel Bowden, Serge Quedraogo, Robert Svoboda, Melinda Sweany</i>
14:20 - 14:40	<b>(#165) H. FURUTA</b> (TI Tokyo, JP) Measurement of Reactor Neutrinos and Backgrounds at the Experimental Fast Reactor JOYO <i>H. Furuta, M. Kuze, M. Ishitsuka, T. Konno, F. Suekane, H. Tabata, Y. Sakamoto, C. Ito, M. Takamatsu and KASKA collaborators</i>
14:40 - 15:20	<b>(#177) Invited Lecture: B. QUITER</b> (UC Berkeley, US) Nuclear Resonance Fluorescence for Materials Assay <i>Brian Quiter, Stan Prussin, Vladimir Mozin, Bernhard Ludewigt, Steve Tobin, Greg McKinney</i>
15:20 - 15:40	<b>(#175) A. PICCOTTI</b> (INFN, IT) Cosmic Ray Radiography with RPC for High-Z Material Identification <i>R. Arnaldi, P. Cortese, G. Dellacasa, N. De Marco, A. Ferretti, M. Gagliardi, M. Gallio, R. Gemme, G. Luparello, P. Mereu, A. Musso, A. Piccotti, C. Oppedisano, E. Scomparin, D. Stocco, E. Vercellin</i>
15:40 - 16:00	<b>(#259) M. SWINHOE</b> (LANL, US) An Integrated Approach for Determining Plutonium Mass in Spent Fuel Assemblies with Nondestructive Assay <i>Martyn T. Swincoe, Stephen J. Tobin, Mike L. Fensin, Howard O. Menlove</i>

Room: **Sormiou**

Chaired by **Dr. Michel BRUGGEMAN** (SCK • CEN, BE)

14:00 - 14:20	<b>(#245) M. BRUGGEMAN</b> (SCK • CEN, BE) kO-NAA for Environmental Monitoring for Safeguards <i>P. Vermaercke, M. Bruggeman, F. Farina, L. Sneyers</i>
14:20 - 14:40	<b>(#178) F. RUDDY</b> (Westinghouse Electric Co., US) Detection of Fission Neutrons Using Semi-Insulating Silicon Carbide Detectors <i>F.H. Ruddy, R.W. Flammang, J.G. Seidel, S.M. Watson, J.T. Johnson</i>
14:40 - 15:00	<b>(#163) W. EL KANAWATI</b> (CEA/DEN, FR) Improvement of the Calibration Database of the EURITRACK Tagged Neutron Inspection System. <i>W. El Kanawati, C. Carasco, B. Perot, A. Mariani, V. Valkovic, D. Sudac</i>
15:00 - 15:20	<b>(#248) B. CABRERA-PALMER</b> (SNL, US) Advances Towards Readily Deployable Antineutrino Detectors for Reactor Monitoring and Safeguards <i>D. Reyna, L. Sadler, B. Cabrera-Palmer, J. Lund, N.S. Bowden, A. Bernstein, S. Dazeley</i>
15:20 - 16:00	<b>(#181) Invited Lecture: M. SWEET</b> (IAEA, AT) - The IAEA Universal Nondestructive Assay Data Acquisition Platform (UNAP) <i>Martin R. Sweet, Mark M. Pickrell, Matthew R. Newell, Richard B. Williams, Robert B. Merl, Colin J. Carrol, David G. Pelowitz</i>
16:00 - 16:20	Coffee break

## Oral presentations in plenary session

Room: **Callelongue**

16:20 - 17:20 **Poster summaries “sessions 2.1, 2.2 & 2.3”**  
**Dr. Daniel PARRAT** (CEA/DEN, FR) & **Dr. Alain LEBRUN** (IAEA, AT)

## Session 2.4 : Power Nuclear Reactors Instrumentation and Measurements Methods

Oral presentations in parallel sessions

Room: **Callelongue**

Chaired by **Dr. Jean-Marc CAVEDON** (PSI, CH)

17:20 - 18:00	<b>(#77) Invited Lecture: F. BAQUE</b> (CEA/DEN, FR) Generation IV Nuclear Reactors: R&D Program For Improving Inspection of Sodium Cooled Systems <i>F. Baqué, G. Rodriguez, D. Verwaerde, J. Sibilo</i>
18:00 - 18:20	<b>(#76) C. BABU RAO</b> (IGCAR, IN) Raman Distributed Sensor System for Temperature Monitoring and Leak Detection in Sodium Circuits of FBR <i>C. Pandian, M. Kasinathan, S. Sosamma, C. Babu Rao, T. Jayakumar, N. Murali, Vishal Paunikar, Suresh Kumar, K.K. Rajan, Baldev Raj</i>

18:20 - 18:40	<b>(#286) R. BASKARAN</b> (IGCAR, IN) Aerosol Characterization and Measurement Techniques Towards SFR Safety Studies <i>R. Baskaran, V. Subramanian, J. Misra, R. Indira, P. Chellapandi, Baldev Raj</i>
Room: <b>Morgiou</b> Chaired by <b>Dr. Jean-François VILLARD</b> (CEA/DEN, FR)	
17:20 - 17:40	<b>(#284) G. BUIMISTRICU</b> (STU, RU) Intelligent Fiber Optic Pressure Sensor for Measurements in Extreme Conditions <i>Grigory Buimistricu, Alexander Rogov</i>
17:40 - 18:00	<b>(#90) E. ROSENKRANTZ</b> (Institut d'Electronique du Sud, FR) Non-Destructive Ultrasonic Method for Nuclear Fuel Rods Pressure and Gas Released Measurement <i>Eric Rosenkrantz, Jean-Yves Ferrandis, Gérard Leveque, Philippe Thevenin, Daniel Baron</i>
18:00 - 18:20	<b>(#83) R. COULON</b> (CEA/DRT, FR) Sodium Fast Reactor Power Monitoring Using <sup>20</sup> F Tagging Agent <i>R. Coulon, S. Normand, G. Ban, V. Dumarcher, HP. Brau, L. Barbot, T. Domenech, V. Kondrasovs, G. Corre, AM. Frelin, T. Montagu, T. Dautremer, E. Barat</i>
Room: <b>Sormiou</b> Chaired by <b>Dr. Marc SCHYNS</b> (SCK • CEN, BE)	
17:20 - 17:40	<b>(#81) P. BORODKIN</b> (SEC NRS, RU) Application of Integral Ex-Core and Differential In-Core Neutron Measurements for Adjustment of Fuel Burn-Up Distributions in VVER-1000 <i>P. Borodkin, G. Borodkin, N. Khrennikov</i>
17:40 - 18:00	<b>(#82) F. BRONSON</b> (CANBERRA, US) The Application of Mathematical Modeling and Simulations for Commercial Nuclear Instrumentation Design, Development and Calibration <i>F. Bronson, S. Croft, W. Russ</i>
18:00 - 18:20	<b>(#262) A. GIRAUD</b> (CEA/DRT, FR) Full Autonomous Monitoring Tools Inside Nuclear Reactor Building <i>Alain Giraud, José Veau</i>
19:15	Bus departure for Gala Dinner at CASSIS
00:00	Back to Parc Chanot (Bus)

## Oral presentations in plenary session

Room: **Callelongue**

08:40 - 09:30	<b>Poster summaries “sessions 1.3, 2.4, 3.1 &amp; 3.2”</b> <b>Dr. Catherine VUILLEMARD</b> (CEA/DSV, FR) <b>Dr. Hamit AIT ABDERRAHIM</b> (SCK • CEN, BE) & <b>Dr. Frédéric MARIE</b> (CEA/DSM, FR)
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## Session 3.2 : Associated Training and Education Activities

Oral presentations in plenary session

Room: **Callelongue**

Chaired by **Pr. Philip BEELEY** (SULTAN NDD, GB)




09:30 - 10:10	<b>(#8) Invited Lectures:</b> <b>J. ANDRE</b> (Univ. of Provence, FR) - How to Design a Diploma According to the Requirements of Industry: The Example of Filière Instrumentation <b>D. RIPPERT</b> (CEA/INSTN, FR) - Conceptual Approach of the Education and Training in Measurement and Instrumentation	
10:10 - 10:30	<b>(#209) C. PAFILIS</b> (Greek Atomic Energy Commission, GR) Education and Training on Nuclear Security in Greece <i>C. Pafilis, V. Kamenopoulou, A. Maltezos, T. Matikas, S. Seferlis, P. Dimitriou</i>	
10:30 - 10:50	<b>(#272) A. WAKER</b> (Univ. of Ontario, CA) Radiological Science Education in the Context of the Nuclear Industry in Ontario <i>Anthony Waker</i>	
10:50 - 11:00	Coffee Break	

## Session 3.1 : Nuclear Instrumentation and Measurements for Safety, Environment and Health Applications

Oral presentations in parallel sessions

Room: **Callelongue**

Chaired by **Pr. J.F. CHATAL** (Univ. of Nantes, FR)

11:00 - 11:40	<b>(#7) Invited Lecture: D. TOWNSEND</b> (Univ. of Tennessee, US) Lost in Translation: From Basic Science to Clinical Reality	
11:40 - 12:20	<b>(#9) Invited Lecture: J.F. CHATAL</b> (Univ. of Nantes, FR) Accelerators and Cyclotrons, Sources of Innovative Radionuclides for Imaging and Treatment	
12:20 - 12:40	<b>(#190) W. GAO</b> (IPHC Strasbourg, FR) Development of a Low-Noise Front-End Readout Chip Integrated with a 89-ps Timing Digitizer for APD-Based Small-animal PET Imaging <i>W. Gao, X. Fang, Ch. Hu-Guo, D. Brasse, B. Humberta, Y. Hu</i>	
12:40 - 13:00	<b>(#251) N. KAWACHI</b> (JAEA, JP) Imaging for Carbon Translocation to a Fruit of Tomato with Carbon-11 Labeled Carbon Dioxide and Positron Emission Tomography <i>Naoki Kawachi, Kaori Kikuchi, Nobuo Suzui, Satomi Ishii, Shu Fujimaki, Noriko S. Ishioka, Hiroshi Watabe</i>	

Room: **Morgiou**

Chaired by **Pr. David TOWNSEND** (Univ. of Tennessee, US)

11:40 - 12:00	<b>(#29) F. RISIGO</b> (Univ. of Insubria, IT) - Novel SiPM Based Device for Safety, Environment and Health Applications <i>Chiara Cappellini, Massimo Cacci, Fabio Risigo, Marco Ramilli</i>
12:00 - 12:20	<b>(#194) F. LE FOULHER</b> (CNRS/IN2P3-IPN Lyon, FR) Prompt Gamma-Ray Monitoring During Carbon Ion Therapy: Comparison Between Measurements and Geant4 Simulations <i>M. Bajard, M. Chevallier, D. Dauvergne, N. Freud, P. Henriquet, S. Karkar, F. Le Foulher, J.M. Létang, R. Plescak, C. Ray, D. Schardt, E. Testa, M. Testa</i>
12:20 - 13:00	<b>(#196) Invited Lecture: S. MAGNE</b> (CEA/DRT, FR) Multichannel OSL Optical Fibre Dosimeter for In Vivo Dosimetry in Radiotherapy <i>S. Magne, L. de Carlan, J.M. Bordy, A. Isambert, A. Bridier, P. Ferdinand</i>

### Session 3.3 : Nuclear Instrumentation for Safeguards and Nuclear Fuel Cycle

Room: **Sormiou**

Chaired by **Pr. Vladimir VALKOVIC** (ACTdoo, HR)

11:40 - 12:00	<b>(#58) B. ROTTNER</b> (ONET Technologies, FR) Effect of Mass and Activity Heterogeneities on the Activity Measurement of Large Packages of Radioactive Waste <i>Bernard Rottner</i>
12:00 - 12:20	<b>(#169) A. LEBRUN</b> (IAEA, AT) - Improved Verification Methods for Safeguards Verifications at Enrichment Plants <i>A. Lebrun, S. Kane, L. Bourva, S. Poirier, N.E. Loghin, D. Langlands</i>
12:20 - 12:40	<b>(#166) K. IANAKIEV</b> (LANL, US) Advanced Enrichment Monitoring Technology Based on Transmission Measurements with X-Ray Source and NaI(Tl) Spectrometer <i>K. Ianakiev, J. Goda, T. Hill, C. Moss, H. Nguyen, R. Parker, J. Ong, S. Sang, M. Swinhoe</i>
13:00 - 14:30	Lunch Break

### Plenary session: Conference Conclusions and Awards Ceremony

Room: **Callelongue**

Chaired by **Pr. Em. Michel GIOT** (Université Catholique de Louvain, BE)

14:30	Panel conclusions - Presented by <b>Pr. Em. Michel GIOT</b> (Université Catholique de Louvain, BE), Chairman of the Scientific Committee  Intervention of <b>Harold FLESCHER</b> (President of the IEEE Technical Activities Board, US)  Awards for two Best Posters  Award for Ph.D. Best Poster
16:00	Final Conclusion
16:30	Adjourn

**End of the Conference**

Paper	Title
<b>SESSION 1.1 - MEASUREMENT AND DETECTION METHODS IN FUNDAMENTAL PHYSICS (NUCLEAR PHYSICS AND PHYSICS OF PARTICLES)</b>	
<b>22</b>	<b>TAToO, an Implementation of an Optical Follow Up for ANTARES</b> <i>Michel Ageron</i>
<b>27</b>	<b>Neutron Detection with Lead Scintillating Fibres Calorimeters</b> <i>M. Anelli, S. Bertolucci, C. Bini, P. Branchini, C. Curceanu, G. De Zorzi, A. Di Domenico, B. Di Micco, A. Ferrari, S. Fiore, P. Gauzzi, S. Giovannella, F. Happacher, M. Iliescu, M. Martini, S. Miscetti, F. Nguyen, A. Passeri, A. Prokofiev, B. Sciascia, F. Sirghi</i>
<b>28</b>	<b>USB-WaveCatcher: a USB-Powered 12-Bit 3.2 GS/s Digitizer</b> <i>Dominique Breton, Eric Delagnes</i>
<b>30</b>	<b>3D Electronics for High Energy Physics and Imaging Devices</b> <i>Jean-Claude Clémens, Patrick Pangaud, Alexandre Rozanov</i>
<b>32</b>	<b>Reference Decay Data, Tools and Applications</b> <i>C. Dulieu, M.M. Bé, V. Chisté, X. Mougeot</i>
<b>34</b>	<b>Pixel Read-Out Architectures for the NA62 Gigatracker</b> <i>G. Dellacasa, A. Cotta Ramusino, M. Fiorini, P. Jarron, J. Kaplon, A. Kluge, F. Marchetto, S. Martoiu, E. Martin Albarran, G. Mazza, F. Osmic, P. Riedler, A. Rivetti, S. Tiuraniemi</i>
<b>36</b>	<b>The Trigger System for the NA62 experiment at the CERN SPS</b> <i>The NA62 Collaboration</i>
<b>37</b>	<b>The Photon Veto System for the NA62 Rare Kaon Decay Experiment</b> <i>The NA62 Collaboration</i>
<b>38</b>	<b>The NA62 Rich Detector</b> <i>A. Bizzeti, F. Bucci, R. Ciaranfi, E. Iacopini, M. Lenti, M. Veltri, G. Anzivino, P. Cenci, E. Imbergamo, M. Pepe, R. Piandani, A. Sergi, V. Falaleev, M. Piccini, M. Raggi, G. Collazuol, S. Giudici, C. Biino</i>
<b>44</b>	<b>A Novel Digital Pulse-Shape Analysis for High-Resolution Position-Sensitive Gamma-Ray Spectroscopy</b> <i>Ju Hahn Lee, Hyo Soon Jeong, Hwa Youn Cho, Young Kwan Kwon, Chun Sik Lee</i>
<b>45</b>	<b>Development of Liquid Scintillation Coincidence System for Absolute Measurements of Activity in Radioactive Decay</b> <i>K.B. Lee, Jong Man Lee, Tae Soon Park, Sang-Han Lee, Pil-Je Oh</i>
<b>49</b>	<b>Optimal Digital Filtering in Gamma Ray Spectroscopy</b> <i>A. Messai, A. Nour, I. Abdellani</i>
<b>51</b>	<b>Radiation Hard Silicon Strip Detectors for the SLHC</b> <i>Ulrich Parzefall on behalf of The ATLAS SCT Collaboration</i>

<b>67</b>	<b>Data Quality Monitor of the Tracking Detectors of the Muon Spectrometer of the ATLAS experiment at the Large Hadron Collider: the Experimental Method and the Experience with Cosmic Rays</b> <i>Elena Solfaroli Camillocci, on behalf of the ATLAS Muon Group</i>
<b>212</b>	<b>The First ATLAS Pixel Detector Full-System Test Setup</b> <i>Greg Hallewell, Dirk Hoffmann, Olivier Pisano, Alexandre Rozanov, Vaclav Vacek</i>
<b>213</b>	<b>On behalf of the ATLAS Calorimeter Trigger Group</b> <i>D.Sc Denis Oliveira Damazioa</i>

## SESSION 1.2 - INSTRUMENTATION AND MEASUREMENT METHODS FOR EXPERIMENTAL NUCLEAR REACTORS

<b>53</b>	<b>Some Effects on a Phototransistor Under a Neutron Fluence</b> <i>Luiz A. P. Santos, Fabio R. Barros, Luciano C. Ursulino, João A. Filho, Eronides F. Silva Jr.</i>
<b>63</b>	<b>Measurement of the Neutron Thermal Absorption Cross Section in Lucite</b> <i>Rene Sanchez, David Hayes, Travis Grove, Jesson Hutchinson, Jennifer Ong, Fredrik Tovesson</i>
<b>94</b>	<b>Experimental Measurements at the MASURCA Facility</b> <i>W. Assal, J.C. Bosq, F. Mellier</i>
<b>95</b>	<b>Effect of Nuclear Radiation on Piezoceramic Elements</b> <i>Franck Augereau, Jean-Yves Ferrandis, D. Fourmentel, Jean-François Villard, Marck Dierckx, Jan Wagemans</i>
<b>96</b>	<b>Coupled Neutronic and Thermo-Mechanical Model of Super Prompt Pulsed Experiments at the Fast Burst Reactor CALIBAN</b> <i>Authier Nicolas, Besse Christophe, Casoli Pierre, Lereuil Hugues, Quenard Sébastien</i>
<b>97</b>	<b>Final Qualification of an Industrial Wide Range Neutron Instrumentation in the OSIRIS MTR Reactor</b> <i>L. Barbot, S. Normand, P. Padeloup, B. Lescop</i>
<b>98</b>	<b>Neutronic Design of Instrumentation for Thermal Effects Measurement on VR-1 Reactor</b> <i>T. Bílý, L. Sklenka</i>
<b>99</b>	<b>Temperature Monitoring of the FUTURIX/MI Irradiation Experiment in PHENIX</b> <i>J.M. Bonnerot, J.M. Esclaine, A. Ravenet, B. Rabu, S. Pillon</i>
<b>100</b>	<b>Study of a New Automatic Reactor Power Control for the TRIGA Mark II Reactor at University of Pavia</b> <i>A. Borio di Tigliole, A. Cammi, Mario A. Gadan, G. Magrotti, V. Memoli</i>
<b>103</b>	<b>Fibre Optics for Metrology in Nuclear Research Reactors, Application to Dimensional Measurements</b> <i>Guy Cheymol, Benoît Brichard, Jean François Villard</i>

<b>105</b>	<b>Activity Measurement of the <math>^{103}\text{Rh}^m</math> X-Ray Emitting Radio-Isotope, Application to Experimental Programs Carried Out in the Reactor Facilities of the CEA</b> <i>Christophe Domergue, Jean Michel Girard, Hervé Philibert, Johann Plagnard</i>
<b>106</b>	<b>A Novel Type of Proton Recoil Telescope for Neutron Spectroscopy</b> <i>A. Donzella, G. Bonomi, A. Zenoni, F. Bocci, A. Fontana, E. Giroletti, M. Barbui, A. Andrichetto, M. Cinausero, M. Lunardon, S. Pesente, G. Prete, V. Rizzi, D. Fabris, M. Morando, S. Moretto, G. Nebbia, G. Viesti</i>
<b>108</b>	<b>Neutron Transmutation Doping (NTD) of Silicon in the Moroccan TRIGA Mark II Reactor</b> <i>L. Elghenati, R. Cherkaoui El Moursli, Y. Tayalati, R. Alami, A. Benahmed</i>
<b>109</b>	<b>Manufacturing and Supply of a Mercury Cooled Rotary Uranium Target for the GELINA Accelerator Facility of IRMM</b> <i>Max Febvre</i>
<b>110</b>	<b>Monitoring Fast Neutrons in a High Flux : the Case for <math>^{242}\text{Pu}</math> Fission Chambers</b> <i>P. Filliatre, C. Jammes, L. Oriol, B. Geslot, L. Vermeeren</i>
<b>111</b>	<b>Development and Manufacturing of Special Fission Chambers for In-Core Measurement Requirements in Nuclear Reactors</b> <i>B. Geslot, F. Berhouet, L. Oriol, S. Breaud, C. Jammes, P. Filliatre, J-F. Villard</i>
<b>115</b>	<b>Brazing Refractory Metals Used in High Temperature Nuclear Instrumentation</b> <i>A. J. Palmer, C. J. Woolstenhulme</i>
<b>118</b>	<b>Simulation of the In-Core Calorimeter Experiment in the SAFARI-1 Reactor</b> <i>B.M. Makgopa, M. Belal</i>
<b>120</b>	<b>Noise Thermometry for Nuclear Applications</b> <i>A. Legrand, J.F. Villard</i>
<b>121</b>	<b>New Temperature Monitoring Devices for High Temperature Irradiation Experiments in the High Flux Reactor Petten</b> <i>M. Laurie, M. A. Fütterer, J.M Lapetite, S. Fourrez, R. Morice</i>
<b>123</b>	<b>Design and Realization of a Measurement System of Cold Neutron Speeds by TOF method</b> <i>Nourddine Khentout</i>
<b>124</b>	<b>Design a Real-Time In-Core Flux Mapping System for a Pool Type Research Reactor</b> <i>F. Javidkia, M. R. Eskandari, M. Gharib</i>
<b>126</b>	<b>Characterization of a Rapid to Thermal Neutron Spectrum Converter on PROSPERO Reactor</b> <i>Jacquet Xavier, Authier Nicolas, Casoli Pierre, Combacon Serge, Calzavara Yoann</i>
<b>127</b>	<b>An Innovating Active Neutronics Interrogation and Time-Dependent Method for Calibrating Fission Chambers in the Dedicated Celina Facility Using a Pulsed Neutron Generator</b> <i>J.P. Hudelot, J.M. Girard</i>

<b>130</b>	<b>Interpretation of In-Pile Oscillation Experiments in the Minerve Facility for the Improvement of Fission Product Cross Sections</b> <i>A. Gruel</i>
<b>132</b>	<b>Reactor Dosimetry by Optical Sensors</b> <i>Tatsuo Shikama, Kentaro Toh, Bun Tsuchiya, And Shinji Nagata</i>
<b>134</b>	<b>In Core Fuel Performance and Material Characterisation in the Halden Reactor</b> <i>R. Van Nieuwenhove</i>
<b>135</b>	<b>Experimental Verification of the Fission Chamber Gamma Signal Suppression by the Campbelling Mode</b> <i>L. Vermeeren, M. Wéber, L. Oriol, S. Breaud, P. Filliatre, S. Normand, B. Lescop</i>
<b>136</b>	<b>Innovations for In-Pile Measurements in the Framework of the CEA - SCK • CEN Joint Instrumentation Laboratory</b> <i>J-F Villard, M. Schyns, on behalf of the CEA - SCK • CEN Joint Instrumentation Laboratory</i>
<b>218</b>	<b>Simulation of Fission Chambers Operated in Current Mode</b> <i>Sébastien Chabod, Alain Letourneau</i>
<b>220</b>	<b>Fuel Rod Instrumentation Techniques Implemented in CEA Hot Laboratory - Improvement and Experimental Feed-Back</b> <i>F. Berdoula, T. Lambert, E. Muller, N. L'hullier</i>
<b>222</b>	<b>3-Dimensional Coupled Neutronic and Thermohydraulic Calculations for a Compact Core Combining MCNPX and CFX</b> <i>Harald Breitzkreutz, Anton Röhrmoser, Winfried Petry</i>
<b>223</b>	<b>Acoustic Sensor for In-Pile Fuel Rod Fission Gas Release Measurements</b> <i>D. Fourmentel, J.F. Villard, J.Y. Ferrandis, F. Augereau, M. Dierckx</i>
<b>228</b>	<b>Oscillation Experiments Techniques in CEA MINERVE Pool Experimental Reactor</b> <i>M. Antony, A. Pepino, J. Di Salvo, A. Lyoussi, JC. Bosq, JP. Hudelot, P. Leconte, D. Bernard</i>
<b>231</b>	<b>Improved Safari-1 Research Reactor Irradiation Position Modeling in Oscar-3 Code System</b> <i>L.E. Moloko</i>
<b>232</b>	<b>Development of a Neutron Imaging Facility at the CENM Maâmora TRIGA Reactor</b> <i>A. Ouardi, R. Alami, B. Bensitel, D. Benchekroun, A. Hommada</i>
<b>233</b>	<b>A Neutronic Evaluation of VHTR and LS-VHTR Reactor</b> <i>Fabiano Cardoso, Cláudia Pereira, Maria Auxiliadora Fortini Veloso, Antonella Lombardi Costa</i>
<b>235</b>	<b>Evaluation of Power Oscillations in a BWR After Control Rod Banks Withdrawal Events</b> <i>Antonella Lombardi Costa, Cláudia Pereira, Francesco D'Auria</i>
<b>238</b>	<b>The BR1 Reactor: a Versatile Irradiation Facility for Fundamental Research and Industrial Applications</b> <i>Jan Wagemans, Guido Vittiglio</i>

<b>268</b>	<b>The MADERE Radio-Activity Measurement Platform: Developments for a Better Addressing to the Experimental Needs</b> <i>J-M. Girard, H. Philibert, S. Testanière</i>
<b>269</b>	<b>Accident Simulation Testing in the HFR Petten Reactor</b> <i>K. Bakker, S. de Groot, R.K. Mutnuru</i>
<b>280</b>	<b>Digital Campbell - A New Platform for Nuclear Application</b> <i>D. Mollo, R. Cibils, E. Nasiff, A. Busto</i>
<b>283</b>	<b>Methods and Instrumentation for Investigating Materials During Their Irradiation in Nuclear Research Reactors</b> <i>I. Bolshakova, R. Holyaka, A. Marusenkov, P. J. Moreau, G. Vayakis, V. Yerashok</i>
<b>285</b>	<b>Changing of the Annunciators to Improve the Human Machine Interface</b> <i>Antonio Velasco</i>
<b>287</b>	<b>Neutron Dosimetry and 3D Neutron Transport Calculations in the HFR Petten “A Powerful Tool in Detailed Neutron Monitoring and Damage Analysis”</b> <i>R.K. Mutnuru, D.J. Ketema</i>

### SESSION 1.3 - NUCLEAR INSTRUMENTATION AND MEASUREMENTS FOR SAFETY, ENVIRONMENT AND HEALTH APPLICATIONS

<b>185</b>	<b>Caesium Adsorption Study on Iron-Pillared-Layered-Montmorillonites</b> <i>A. Ararem, O. Bouras, F. Arbaoui</i>
<b>186</b>	<b>Calibration of Radon Detectors Using a Simple Calibration Chamber and Soil Gas</b> <i>Darwish Al-Azmi, N. Karunakara</i>
<b>188</b>	<b>New Techniques of Low Level Environmental Radiation Monitoring at JLAB</b> <i>Pavel Degtiarenko, Vladimir Popov</i>
<b>189</b>	<b>Germanium Detector Calibration According to the Standard NF M 60-180 Without Using Radioactive Sources</b> <i>JM. Duda, J. Chazalet, Y. Tauvel, F. Poulet, Y. Losset, I. Garell, L. Vichot</i>
<b>191</b>	<b>LORINE: Neutron Emission LOCatorR by SOI Detectors</b> <i>H. Hamrita, V. Kondrasovs, J.M. Bourbotte, N. Saurel, S. Normand</i>
<b>199</b>	<b>Impact Assessment into the Environment of Tritium Dispersion in the Ground Water: Case Study</b> <i>D. Qassoud, J. Ziagos, Z. Demir, A. Hajjani</i>
<b>254</b>	<b>A Monitoring System of Radioactive Tracers in Hydroponic Solution for Research on Plant Physiology</b> <i>Nobuo Suzui, Naoki Kawachi, Mitsutaka Yamaguchi, Noriko S. Ishioka, Shu Fujimaki</i>
<b>255</b>	<b>Experimental Study of the Zeolite Affinity for the Dioxin Adsorption for a New Direct and On-Line Measurement Method</b> <i>M. Mercury, M. Carette, A. Janulyte, R. Denoyel, C. Reynard, Y. Zerega, A. Simon-Masseron</i>

## SESSION 2.1 - MEASUREMENT AND DETECTION METHODS IN FUNDAMENTAL PHYSICS (FUSION AND PLASMA PHYSICS)

<b>25</b>	<b>Recent Advances in the Development of X-Ray Cameras Inserted Inside a Pressurised Box for LMJ Plasma Diagnostics</b> <i>T. Beck, C. Zuber, D. Aubert, C. Chollet, P. Brunel, S. Huelvan</i>
<b>31</b>	<b>Acquisition of Neutron-Induced Gamma Signatures for Spectroscopic Analysis</b> <i>E. Cusset, R. Vogler, P. Pras, B. Perot, C. Carasco, J.L. Ma, M. Gmar, G. Sannie, S. Normand</i>
<b>55</b>	<b>Measurement Methods Associated to Laser Ablation Technique in Layer Removal Process on Plasma Facing Components</b> <i>H. Roche, C. Grisolia, C. Hernandez, X. Courtois, N. Vignal, C. Pocheau, E. Gauthier, P. Delaporte, L. Mercadier, A. Semerok, D. Farcage</i>
<b>56</b>	<b>Development of Fast CVD Diamond Detectors for Inertial Confinement Fusion Experiments</b> <i>O. Landoas, V. Yu. Glebov, L. Disdier, M. Briat, B. Rossé, P. Bergonzo, D. Tromson</i>
<b>57</b>	<b>Neutron Spectroscopy in Inertial Confinement Fusion Experiments Using the DEMIN Spectrometer</b> <i>B. Rossé, M. Houry, E. Delagnes, Ph. Legou, O. Landoas, V. Yu. Glebov, T. C. Sangster</i>
<b>60</b>	<b>Stochastic Neutron Transport with Pure-Triplet Scattering in Finite Plane Medium Using Gaussian Statistics</b> <i>M. Sallah, M.M. Selim, C.A. Margeanu</i>
<b>61</b>	<b>Radial Dependence of Induced Current Density and Small Pixel Effect in Parallel-Plate Detectors</b> <i>V.V. Samedov</i>
<b>62</b>	<b>Position Resolution Estimation for Centroid Formula in Strip Detectors</b> <i>V.V. Samedov</i>
<b>65</b>	<b>Method to Define and Optimize the Acquisition Channel of the LMJ Plasma Diagnostic, Example of DMX Diagnostic</b> <i>P. Semécurbe, V. Allouche, V. Drouet, M. Prat, B. Villette</i>
<b>101</b>	<b>Analysis of the Polarisation Rotation of Far Infrared Beams in the TORE SUPRA Plasmas</b> <i>C. Brault, C. Gil, P. Spuig</i>
<b>113</b>	<b>Development of On-Line Tritium Monitor Based Upon Artificial Diamond and Test on a ITER Blanket Mock-Up</b> <i>M. Pillon, M. Angelone, S. Almaviva, Marco Marinelli, E. Milani, G. Prestopino, C. Verona, G. Verona-Rinati</i>
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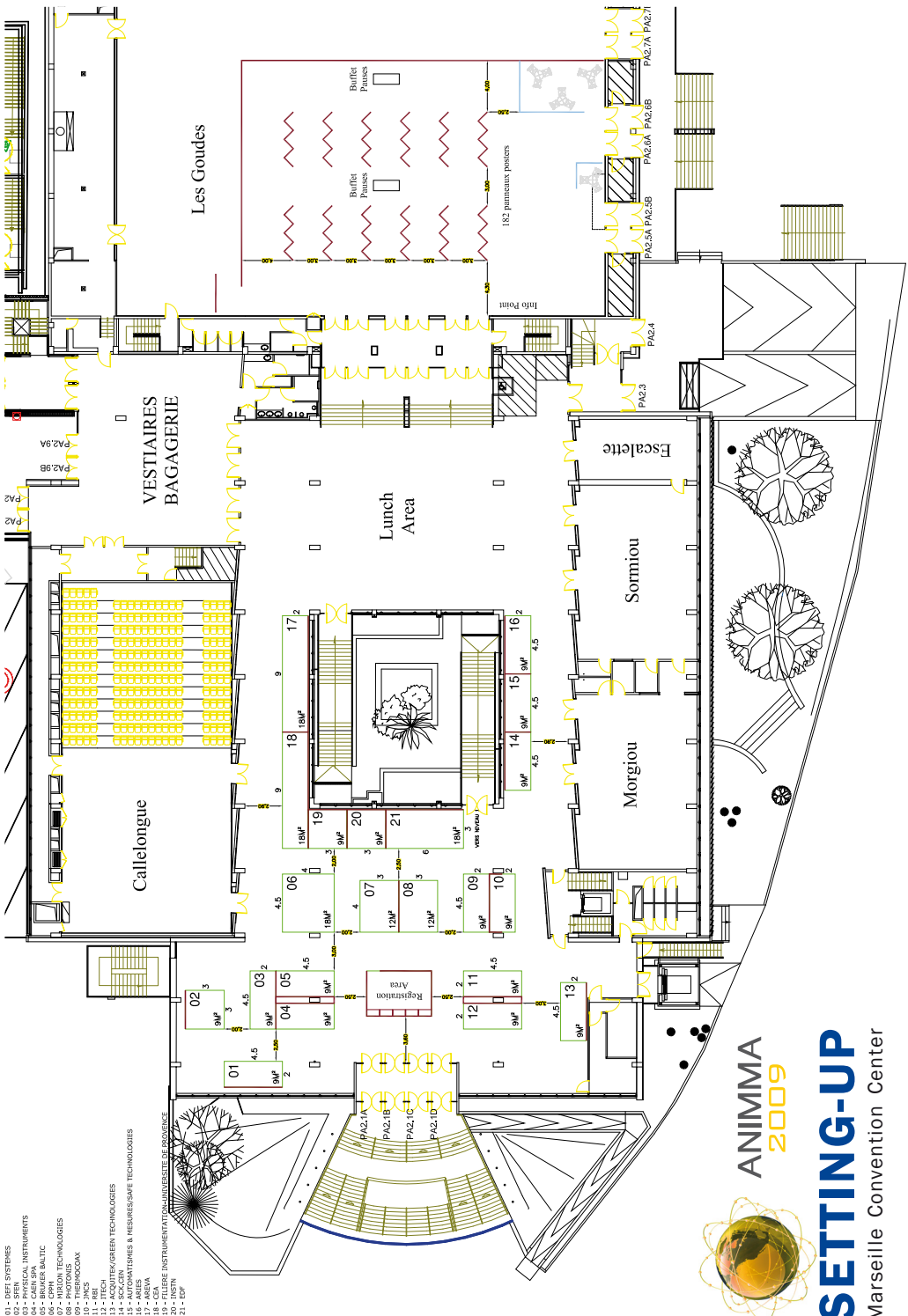
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