Monday April 20th

Day				
Room	**Workshop**	**Workshop**	**Workshop**	**Short courses**

Workshop "Radiation Effects in Electronics for Nuclear and Physics Instrumentation" Pr Jean-Luc Autran and Dr Jean-Luc Leray 9:00-16:30	**Workshop "Monte Carlo Methods Applied to the Design of Nuclear Instrumentation and Radiation Detection Systems"** Pr Pedro Vaz, Raul Fernandes and Yuriy Romanets 9:15 - 13:30	**Workshop "In-pile Thermal Measurements"** Dr Christelle Reynard-Carette and Jean-François Villard 10:30 - 16:00	**Short courses "standard and state-of-the-art instrumentation for fission and fusion reactors" -** Dr Ludo Vermeeren 8:30 - 18:00

9:00-9:45
Short Overview of Radiation Effects of interest in Instrumentation Front-End and Ancillary Electronics
Jean-Luc Leray (CEA, France)

9:45-10:15
Single Event Effects: the effects of Single particles on Electronics - Space, Aerospace and Ground
Jean-Luc Autran (Aix-Marseille University, IM2NP UMR CNRS 7334, France)

09:15-9:45
FLUKA Monte Carlo Code: Introduction and Radiation Detector Applications
Ruben Garcia (CERN, Switzerland)

09:45-10:15
Use of GEANT4 for the design of radiation detection systems
GEANT4 team

8:30 - 10:15 Short Course Module 1 : Radiation detection and measurement methods
A. Lyoussi, (CEA and INSTN, France)

10:15-10:30 Coffee Break

10:30-11:00
The TID Total Integrated Dose effects
Philippe Paillet (CEA, France)

11:00-11:30
The Total Dose issue in Remote Handling Electronics – from Fission to Fusion
Marco Van Uffelen (Fusion For Energy, F4E)

11:30-12:00
TID Effects in CMOS and SOI - HBD vs HBT – application to MGy Hardening of a CMOS Imager
Marc Gaillardin, (CEA, France) et Vincent Goiffon (ISAE, France)

12:00-12:30
MGy tolerant IC design: from 0.7 µm to 40 nm CMOS
Paul Leroux (KUL, Belgium)

10:30-11:00
Monte Carlo simulation with the PENELOPE code of radiation detection systems
L. Brualla (U. Essen, Deutschland)

11:00-11:30
The Joint Research Centre of the European Commission: pushing Nuclear Security forward
C. Carrapiço (JRC-iSPRA)

11:30-12:00
MC simulations for the testing of RN threat scenarios - the REWARD project
R. Luís (IST, Portugal)

12:00-12:30
Monte-Carlo Simulations for the improvement of the design of an in-pile sensor dedicated to nuclear heating quantification.
H. Amharrak (Aix-Marseille Université, IM2NP UMR7334, France)

10:30-10:40
Introduction
Christelle Reynard-Carette (Aix-Marseille Université, IM2NP UMR7334, France) and Jean-François Villard (CEA/DEN/DER/SPEX/LDCI, France)

10:40-11:15
Thermal Design and Local Power Measurements for In-core Experiments at the MIT Research Reactor
Gordon E Kohse (MIT, USA)

11:15-11:50
Review and perspectives of in-pile temperature measurements
Jean-François Villard (CEA/DEN/DER/SPEX/LDCI, France)

11:50-12:25
Is it possible to improve temperature measurement in the nuclear industry?
Mohamed Sadli
(Laboratoire commun de métrologie LNE-Cnam, Saint-Denis, France)

10:30 - 11:00 Short Course Module 2: Counting neutrons in a nuclear reactor by reactor dosimetry
J. Wagemans, (SCK•CEN, Belgium)

11:00 - 11:30 Short Course Module 3: Self-powered neutron detectors: principles and specific features
(L. Vermeeren, SCK•CEN, Belgium)

11:30 - 12:30 Short Course Module 4: Towards future nuclear systems: fast neutron detection
G. Imel, (Idaho State University, USA)

12:30-13:30 Lunch Break

13:30-14:00
Optical Fibers in Fission and Fusion other related topics
Sylvain Girard (Laboratoire Hubert Curien, St-Etienne University, France)

14:00-14:30
Silicon-Carbide based Thermal Neutron Detectors and their Applications
L. Ottaviani (Aix-Marseille Université, IM2NP UMR7334, France), V. Vervisch, F. Issa, R. Ferrone, S. Biondo, W. Vervisch, D.Szalkai, A. Klix, M. Lazar, L. Vermeeren, A. Kuznetsov, A. Hallén, A. Lyoussi

13:35-14:10
Differential Calorimeter and single-cell calorimeter: A comparison from calibration to in-pile measurements.
Julie Brun (Aix-Marseille Université, IM2NP UMR7334, France) and Mikolaj Tarchalski (NCBJ, Poland)

14:10-14:30
Discussions
All

13:30 - 14:30 Short Course Module 5: Advanced diagnostics concepts for fusion reactors
J.-M. Layet, (Aix-Marseille University, France)

14:30-14:45 Coffee Break

14:45-15:15
Radiation Hardness Assurance for LHC systems: testing and modeling
Rubén García Alía, Markus Brugger, Julien Mekki, Slawosz Uznanski (CERN, Switzerland)

15:15-15:45
Radiation reliability of power electronics at ground level
Antoine Touboul (IES, Université Montpellier-2, France)

15:45-16:15
Radiation Hardening Electronics Approach for ITER Subsystems – From Radiation Hardening to COTS electronics
Martin Dentan (ITER Organization)

16:15-16:30
Concluding remarks
Jean-Luc Leray (CEA, France)

16:30
End of the workshop

14:45-15:20
Nuclear Heating Measurements inside the OSIRIS Reactor. Different Types of Calorimeter. Advantages and Drawbacks
Hubert CARCREFF
(CEA/DEN/DRSN/SIREN/LASPI, France

15:20-16:00
Discussions and conclusions
All

14:45 - 15:45 Short Course Module 6: How to Characterise a Reactor Relevant Fusion Plasma (A.Murari, JET, UK)

16:00 - 17:00 Optional Examination

18:00: Proclamation

18:20 – 20:00 Welcome Cocktail

▨	Workshops
▨	Short courses