

# SCIENTIFIC PROGRAMME

**Monday 26th September 2011**

**Opening of the colloquium  
08:30 - 09:00**

**P. Roussel-Chomaz, CEA/DSM Associate director (5')**

**S. Galès, GANIL Caen, France (20+5)**

GANIL and the SPIRAL2 project

**Super Heavy Elements  
09:00 – 10:35**

**Chairperson : D. Ackermann**

**09h00-09h25 F. Hessberger, GSI Darmstadt, Germany (20+5)**

Nuclear Structure of the Heaviest Elements – Investigated at GSI

**09h25-09h50 A. Popeko, JINR Dubna, Russia (20+5)**

Synthesis of superheavy elements and perspectives

**09h50-10h15 M.O. Frégeau, GANIL Caen, France (20+5)**

Search for X-rays characteristic of element with  $Z=120$

**10h15-10h35 E. Litvinova, GSI Darmstadt, Germany (15+5)**

Quasiparticle-vibration coupling in relativistic framework: shell structure of  $Z=120$  isotopes

*10:35 – 11:00 Coffee break*

**Interdisciplinary physics  
And two-proton radioactivity  
11:00 – 12:55**

**Chairperson : D. Vernhet**

**11h00-11h25 C. Hellweg, DLR Koln, Germany (20+5)**

Radio-biology challenges for human space flights

**11h25-11h50 E. Lamour, INSP Paris, France (20+5)**

FISIC: a collider project on SPIRAL2 for Atomic Physics

**11h50-12h15 C. Grygiel, CIMAP Caen, France (20+5)**

In-situ X-Ray diffraction for ionic-covalent material study under swift heavy ion irradiation

**12h15-12h35 P. Ascher, CENBG Gradignan, France (15+5)**

Two-proton radioactivity studies with a TPC

**12h35-12h55 M. Assié, IPN Orsay, France (15+5)**

Bridging of the two-proton radioactivity of  $^{19}\text{Mg}$ : spectroscopy of the unbound nucleus  $^{18}\text{Na}$

*13:00 Lunch*

### **Nuclear reaction studies**

**16:00 – 19:20**

**Chairperson : M. Lewitowicz**

**16h00-16h25 M. Rejmund, GANIL Caen, France (20+5)**

Recent results from VAMOS experiments

**16h25-16h45 O. Delaune, GANIL Caen, France (15+5)**

Evolution of fission fragment yields with excitation energy (from 10 MeV to 200 MeV)

**16h45-17h05 J.L. Sida, CEA Irfu Saclay, France (15+5)**

SPY: a microscopical statistical scission-point model to predict fission fragment distributions

**17h05-17h25 E. Simeckova, NPI ACVR Rez, Czech Republic (15+5)**

Deuteron activation measurements on the NPI Rez cyclotron at deuteron energies up to 20 MeV

*17:25 – 17:55 Coffee break*

**Chairperson : T. Motobayashi**

**17h55-18h15 A. Gillibert, CEA/Irfu, Saclay, France (15+5)**

CHyMENE: a new solid hydrogen target for low energy beams

**18h15-18h40 M.J. Borge, IEM CSIC Madrid, Spain(20+5)**

Elastic scattering of the halo nucleus  $^{11}\text{Li}$  and its core  $^9\text{Li}$  on  $^{208}\text{Pb}$  at energies around the Coulomb barrier

**18h40-19h00 F. Wamers, Institut fur Kernphysik, TU Darmstadt, Germany (15+5)**

Direct reactions with the proton-dripline nucleus  $^{17}\text{Ne}$  at relativistic beam energies

**19h00-19h20 E. Lienard, LPC Caen, France (15+5)**

Simultaneous measurement of the beta-neutrino correlation coefficient and shake off probability in the beta decay of noble gas singly charged ions

*19:20 Welcome Cocktail*

*20h30 Dinner*

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**Tuesday 27<sup>th</sup> September 2011**

**Nuclear reaction studies  
09:00 – 10:40**

**Chairperson : S. Lukyanov**

**09h00-09h20 A. Kulko, JINR Dubna, Russia (15+5)**

Isomeric ratios for  $^{196,198}\text{Tl}$  and  $^{196,198}\text{Au}$  from fusion and transfer in the interaction of  $^6\text{He}$  with  $^{197}\text{Au}$

**09h20-09h40 Y. Penionzhkevich, FLNR/JINR Dubna, Russia (15+5)**

Production of extremely neutron-rich fragments of light elements

**09h40-10h00 L. Nalpas, CEA Irfu, Saclay, France (15+5)**

Deeply bound nucleon removal and one-nucleon transfer on light radioactive nuclei

**10h00-10h20 I. Martel, Huelva University, Spain (15+5)**

Near-barrier scattering of light halo nuclei

**10h20-10h40 S. Hilaire, CEA/DAM Arpajon, France (15+5)**

Nuclear level densities and the DIM Gogny force

*10:40 -11:10 Coffee break*

**Nuclear structure and gamma spectroscopy  
11:10 – 12:55**

**Chairperson : O. Sorlin**

**11h10-11h35 H. J. Wollersheim, GSI Darmstadt, Germany (20+5)**

The PRESPEC campaign

**11h35-11h55 L. Caceres, GANIL Caen, France (15+5)**

First evidence of the location of the spherical  $2^+_2$  state in  $^{44}\text{S}$

**11h55-12h15 A. Matta, IPN Orsay, France (15+5)**

Nuclear spectroscopy of neutron rich  $^{10}\text{He}$  by  $^{11}\text{Li}$  ( $d, ^3\text{He}$ ) transfer reaction

**12h15-12h35 B. Avez, CENBG Gradignan, France (15+5)**

Recent advances in mean-field based methods : improved description of low-lying states by configuration mixing

**12h35-12h55 M. Vandebrouck, IPN Orsay, France (15+5)**

Measurement of the Giant Monopole and Quadrupole Resonances in  $^{68}\text{Ni}$  using Maya Active Target

*13:00 Lunch*

## **Nuclear structure**

**16:00- 19:35**

**Chairperson : W. Gelletly**

**16h00-16h20 M. Freer, University of Birmingham, United Kingdom (15+5)**

Study of cluster states using resonant scattering with a helium gas target

**16h20-16h45 F. Rotaru, IFIN-HH, Bucharest, Romania, (20+5)**

New isomers at the border of the “Island of inversion”

**16h45-17h10 H. Ueno, RIKEN, Japan, (20+5)**

Nuclear-moment measurements around N=20 neutron-rich nuclei

**17h10-17h35 E. Farnea, INFN Padova, Italy (20+5)**

Recent results from the AGATA Demonstrator Array at Laboratori Nazionali di Legnaro

*17:35–18:05 Coffee break*

**Chairperson : W. Korten**

**18h05-18h25 R. Chevrier, CEA/DAM, Arpajon, France (15+5)**

Quadrupole moment measurement of the N=27 nucleus  $^{43}\text{S}^m$

**18h25-18h50 G. de France, GANIL Caen, France (20+5)**

The pn coupling in N=Z nuclei

**18h50-19h15 P. Van Isacker, GANIL Caen, France (20+5)**

Neutron-proton pairs in N=Z nuclei

**19h15-19h35 G. Hupin, GANIL Caen, France (15+5)**

Pairing correlation in finite system

*20:30 Dinner*

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## **Wednesday 28 September 2011**

**08h00-08h30** – Closed joint session GANIL Scientific Council and SPIRAL2 Scientific Advisory Committee

### **Open joint session**

#### **Fundamental interactions and SPIRAL2 detectors 08:30 -10:40**

**Chair :** Chairperson of the GANIL Scientific Council

**08h30-09h00** **B.Blank, CENBG, Bordeaux-Gradignan, France (25+5)**  
Fundamental Interactions at GANIL

**09h00-09h25** **G. Grinyer, GANIL Caen, France (20+5)**  
ACTAR

**09h25-09h50** **G. Ban, LPC Caen, France (20+5)**  
DESIR

**09h50-10h15** **G. de France, GANIL Caen, France (20+5)**  
EXOGAM2

**10h15-10h40** **R. Bougault, LPC Caen, France (20+5)**  
FAZIA

*10:40 – 11:00 Coffee break*

#### **SPIRAL2 detectors 11:00 - 12:45**

**Chair :** M. Harakeh, Chairperson of the SPIRAL2 SAC

**11h00-11h25** **D. Beaumel, IPN Orsay, France (20+5)**  
GASPARD

**11h25-11h50** **J.J. Valiente-Dobon, LNL Legnaro, Italy (20+5)**  
NEDA

**11h50-12h15** **A.Maj, IFJ Krakow, Poland (20+5)**  
PARIS

**12h15-12h30** **X. Ledoux, CEA/DAM/SPN, Arpajon, France (12+3)**  
NFS

**12h30-12h45 H. Savajols GANIL Caen, France (12+3)**  
S3

*12:45 – 14:00 Lunch*

*14:00 Departure of the Excursion*

**Closed session for the GANIL Scientific Council and SPIRAL2 Scientific  
Advisory Committee  
14h00 - 18h00**

**19:15-19:45 – PhD Award ceremony**

*20:30 Corsica Barbecue*

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## Thursday 29<sup>th</sup> September 2011

### Nuclear Structure and Astrophysics

09:00 – 10:35

Chairperson : F. de Oliveira

**09h00-09h25 A. Murphy, University of Edinburgh, U.K., (20+5)**

Exploring  $^{19}\text{Ne}$  near the  $^{18}\text{F}+p$  threshold and application to the  $^{18}\text{F}(p, \alpha)^{15}\text{O}$  reaction for novae

**09h25-09h50 F. Hammache, IPN Orsay, France, (20+5)**

Study of the astrophysical reaction  $^{60}\text{Fe}(n,\gamma)^{61}\text{Fe}$  via  $(d,p\gamma)$  transfer reaction

**09h50-10h10 P. Ujic, GANIL Caen, France (15+5)**

The  $(\alpha, \gamma)$  reaction in inverse kinematics relevant to the astrophysics ; the coulomb screening effect in the beta-decay

**10h10-10h35 C. Barbieri, Univ. Surrey, UK (20+5)**

Toward ab-initio calculations of medium-mass nuclei using Gorkov Green's functions

*10:35 - 11:00 Coffee break*

### Nuclear Structure and reactions

11:00 – 12:50

Chairperson : M. Jezabek

**11h00-11h25 O. Tarasov, MSU East Lansing, USA, (20+5)**

A search for new neutron-rich isotopes in the range  $20 < Z < 82$  using different reaction mechanisms

**11h25-11h45 M. Niikura, IPN Orsay, France (15+5)**

Lifetime measurement of the  $2^+$  state in  $^{74}\text{Zn}$  by Recoil-distance Doppler-shift method at GANIL

**11h45-12h05 J.-P. Ebran, CEA/DAM Arpajon, France (15+5)**

Relativistic Hartree-Fock-Bogoliubov model for deformed nuclei

**12h05-12h25 D. Yordanov, CERN Switzerland, (15+5)**

Magnesium charge radii: the sd shell revealed by a dedicated laser spectroscopy

**12h25-12h50 B. Rubio, IFIC Valencia, Spain (20+5)**

Decay studies of  $T_z = -1$  and  $-2$  nuclei and the “isospin quasi selection rule”

*13:00 Lunch*

**Nuclear structure and reactions**  
**16:00 – 17:40**

**Chairperson : D. Guillemaud-Mueller**

**16h00-16h20 A. Dijon, GANIL Caen, France (15+5)**

Prompt and delayed spectroscopy in the vicinity of  $^{68}\text{Ni}$  at VAMOS-EXOGAM

**16h20-16h40 S. Péru, CEA/DAM, Arpajon, France (15+5)**

Spectroscopy along isotopic chains within self-consistent QRPA approach with the Gogny force

**16h40-17h00 G. Duchène, IPHC Strasbourg, France (15+5)**

Search for the neutron  $2d_{5/2}$  single particle state in  $^{69}\text{Ni}$

**17h00-17h20 K. Sieja, IPHC Strasbourg, France (15+5)**

Dipole excitations in the islands of inversion

**17h20-17h40 G. Lhersonneau, GANIL Caen, France (15+5)**

In-target production measurements for SPIRAL2

*17:40 – 18:00 Coffee break*

**Chairperson H. Goutte**

**18:00** Short presentations of posters

**Poster Session**

**Cocktail**

**18:40 – 20:30**

*20:30 dinner*

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## Friday 30th September 2011

### Future developments

9:00 - 12:00

Chairperson : F. Azaiez\*

**09h00-09h25 H. Stoecker, GSI Darmstadt, Germany (20+5)**

FAIR and GSI: The science and the roadmap

**09h25-09h50 M. Itkis, JINR Dubna, Russia (20+5)**

Nuclear Reaction Mechanism Induced by Heavy Ions

**09h50-10h15 M. Huyse, IKS KU Leuven, Belgium (20+5)**

Laser ionization and laser spectroscopy experiments at Louvain-la-Neuve. Feasibility studies for gas-cell projects at S3

*10:15 – 10:45 Coffee break*

**10h45-11h05 P. Delahaye, GANIL Caen, France (15+5)**

SPIRAL upgrade

**11h05-11h30 J. Colin, LPC Caen, France (20+5)**

Nuclear Physics and Hadrontherapy

**11h30-11h45 J. Martino, Director CNRS/IN2P3 Paris, France**

Conclusions

*12:00 Lunch*

**End of the meeting  
13h30 – departure to the airport**

\* to be confirmed