

# SPIRAL2 Week 2011 – Detailed Scientific Programme

Monday January 24<sup>th</sup>, 2011 - Morning

## Introduction

- 9:30 – 9:50 **Welcome**  
S. Galès – GANIL, France
- 9:50 – 10:25 **Status of SPIRAL2**  
M. Jacquemet – GANIL, France
- 10:25 – 11:00 **SPIRAL2 Physics and Collaborations**  
M. Lewitowicz – GANIL, France

*11:00 – 11:30 Coffee Break*

## Driver Accelerators – 1

*Chair: M. Di Giacomo – GANIL, France*

- 11:30 – 11:50 **Progress of construction of the Spiral2 driver accelerator**  
P. Bertrand – GANIL, France
- 11:50 – 12:15 **Infrastructure and Integration of Phase 1**  
E. Petit – GANIL, France
- 12:15 – 12:35 **Installation and Schedule**  
R. Ferdinand – GANIL, France
- 12:35 – 13:00 **Technical and Beam Test results at LPSC/Grenoble**  
J.L. Biarrotte – CNRS/IPNO, France

*13:00 – 14:30 Lunch*

Monday January 24<sup>th</sup>, 2011 - Afternoon

**Driver Accelerators – 2**

*Chair: P. Bertrand – GANIL, France*

14:30 – 14:55 **Technical and Beam Tests at IRFU/Saclay**  
C. Van Hille – CEA/IRFU, France

14:55 – 15:20 **Status of Cryomodules A&B**  
P.-E. Bernaudin – GANIL, France

15:20 – 15:45 **LLRF tests**  
Ph. Galdemard / O. Piquet – CEA/IRFU, France

15:45 – 16:10 **Diagnostics**  
P. Ausset – CNRS/IPNO, France

16:10 – 16:35 **SPIRAL2 vacuum systems**  
R. Levallois – GANIL, France

*16:35 – 17:00 Coffee Break*

17:00 – 18:30 **Parallel Meetings**  
(see separate Programme of Parallel Meetings for details)

*19:00 Cocktail*

## Tuesday January 25<sup>th</sup>, 2011 - Morning

### **RNB – 1**

*Chair: A. Savalle - GANIL*

- 9:00 – 9:20 **RNB production building**  
M. Quiclet – GANIL, France
- 9:20 – 9:40 **Infrastructure and Integration of Phase 2**  
O. Danna – GANIL, France
- 9:40 – 10:00 **High current RFQ Cooler**  
G. Ban – CNRS/LPC Caen, France
- 10:00 – 10:20 **High Resolution Mass Separator**  
T. Kurtukian-Nieto – CNRS/CENBG, France
- 10:20 – 10:40 **Charge Breeder & n+ vertical beam-line**  
T. Lamy – CNRS/LPSC, France
- 10:40 – 11:00 **N+ beam line to CIME**  
M.-H. Stodel – GANIL, France

*11:00 – 11:30 Coffee Break*

### **Driver Accelerators – 3**

*Chair: R. Ferdinand – GANIL, France*

- 11:30 – 12:00 **IFMIF/EVEDA Status**  
A. Mosnier – IFMIF, CEA/IRFU, France
- 12:00 – 12:30 **TRIUMF and RBN developments**  
M. Marchetto – TRIUMF, Canada
- 12:30 – 13:00 **Last results of SC Cavities at HIE ISOLDE**  
M. Pasini – CERN, Switzerland

*13:00 – 14:30 Lunch*

Tuesday January 25<sup>th</sup>, 2011 - Afternoon

**Safety & RNB – 2**

*Chair: J. Sauret – GANIL, France*

14:30 – 14:50 **Safety at SPIRAL2**

E. Pichot – GANIL, France

14:50 – 15:10 **DeD/integrated dose**

A. Savalle – GANIL, France

15:10 – 15:30 **IBE- Beam identification systems**

D. Etasse – CNRS/LPC Caen, France

15:30 – 16:00 **Production systems: Targets and ion sources**

H. Franberg-Delahaye – GANIL, France

16:00 – 16:30 **Production module and front-end**

Y. Huguet – GANIL, France

*16:30 – 17:00 Coffee Break*

17:00 – 18:30 **Parallel Meetings** (see separate Programme of Parallel Meetings for details)

Wednesday January 26<sup>th</sup>, 2011 - Morning

**RNB & High Beam Power Facilities Worldwide**

*Chair: S. Galès – GANIL, France*

- 9:00 – 9:25     **FAIR**  
B. Sharkov – FAIR, Germany
- 9:25 – 9:50     **RIBF**  
H. Sakai – RIKEN, Japan
- 9:50 – 10:15   **HIE-ISOLDE**  
Y. Blumenfeld – CERN, Switzerland
- 10:15 – 10:40   **SPES**  
G. Prete – INFN, Italy
- 10:40 – 11:05   **FRIB**  
K. Gelbke – MSU, USA (tbc)

*11:05 – 11:30 Coffee Break*

**FP7 SPIRAL2 PP Open Session**

*Chair: B. Saghai – CEA, France*

- 11:30 – 11:40   **Introduction**  
M. Lewitowicz – GANIL, France
- 11:40 – 12:05   **ICC**  
A. Maj – IFJ PAN, Poland
- 12:05 – 12:30   **SPIRAL2 PP LINAC activities**  
F. Negoita – IFIN-HH, Romania
- 12:30 – 12:55   **Activities linked to the production of radioactive nuclear beams**  
L. Tecchio – INFN, Italy

*12:55 – 14:30 Lunch*

Wednesday January 26<sup>th</sup>, 2011 - Afternoon

**Open Meeting of SPIRAL2 SAC – 1  
Theory & Detectors & Lols SPIRAL2 Phase 2**

*Chair: M. Harakeh – KVI, The Netherlands*

- 14:30 – 15:10 **Modern theoretical nuclear physics and the FUSTIPEN collaboration**  
G. Bertsch, University of Washington, USA
- 15:10 – 15:30 **Status of S3**  
H. Savajols – GANIL, France
- 15:30 – 15:50 **Status of NFS**  
X. Ledoux – CEA, France
- 15:50 – 16:10 **Status of HELIOS**  
B. Kay – STFC, UK
- 16:10 – 16:25 **LoI\_SP2\_Ph2 1 – Precision mass measurements of nuclei with  $Z \sim 104$  from S3 with MLLTRAP at DESIR** – P. G. Thirolf

*16:25 – 16:45 Coffee Break*

**Open Meeting of SPIRAL2 SAC – 2  
Lols SPIRAL2 Phase 2**

*Chair: M. Harakeh – KVI, The Netherlands*

- 16:45 – 18:45 (Each presentation 10'+5' for questions)
- LoI\_SP2\_Ph2 2 **High-precision determination of the half-lives, branching ratios, and Q values of superallowed  $\beta$  decays in  $^{66}\text{As}$  and  $^{70}\text{Br}$  with BESTIOL and MLLTRAP at DESIR** – C. Weber
- LoI\_SP2\_Ph2 3 **Search for cluster radioactivity in the region above  $^{100}\text{Sn}$**  - B. Blank
- LoI\_SP2\_Ph2 4 **The mass of  $^{100}\text{Sn}$  and the extraordinary binding of  $N = Z$  nuclides** - D. Lunney
- LoI\_SP2\_Ph2 6 **Charge radius change and nuclear moment measurement in the  $N=50$  and  $N=104$  region using the LUMIERE setup at the DESIR facility** - F. Le Blanc
- LoI\_SP2\_Ph2 7 **Neutron monopole drift towards  $^{78}\text{Ni}$  investigated by gamma-spectroscopy following  $^{81}\text{Cu}$  beta-decay** - D. Verney
- LoI\_SP2\_Ph2 8 **High precision measurements in mirror beta decays to test the CVC hypothesis and the CKM unitarity** - E. Liénard
- LoI\_SP2\_Ph2 9 **Half-life and binding - energy measurements for rapid-neutron-capture nucleosynthesis** - T. Kurtukian-Nieto
- LoI\_SP2\_Ph2 53 **Interference contributions to the astrophysical rate of the  $^{140}(\alpha,p)^{17}\text{F}$  reaction** - A. Aliotta

*19:30 Conference dinner*

Thursday January 27<sup>th</sup>, 2011 - Morning

**Open Meeting of SPIRAL2 SAC – 3**

**Lol Day 1 SPIRAL2 Phase 2**

*Chair: B. Blank – CNRS, France*

9:00 – 11:30 (Each presentation 10'+5' for questions)

- LoI\_SP2\_Ph2 25 **Investigation of extreme deformation in Cd isotopes at high angular momentum** - A. Gørgen
- LoI\_SP2\_Ph2 10 **Study of quantum phase transitions around  $A = 100$  from the nuclear mass surface** - D. Lunney
- LoI\_SP2\_Ph2 11 **Collinear laser spectroscopy of neutron deficient isotopes of Ag and Sn across the  $N=50$  shell closure** - M. L. Bissell
- LoI\_SP2\_Ph2 12 **Beta-Delayed Spectroscopy of Laser-Polarized Beams** – D. T. Yordanov
- LoI\_SP2\_Ph2 13 **Beta-delayed two-proton emission studies** – J. Giovinazzo
- LoI\_SP2\_Ph2 14 **Study of intruder configurations in the neutron-rich Co isotopes** - T. E. Cocolios
- LoI\_SP2\_Ph2 15 **Decay spectroscopy of the very neutron-rich Kr isotopes at SPIRAL2-DESIR** - F. Delaunay
- LoI\_SP2\_Ph2 16 **Charge structure of manganese and iron isotopes as proton separation energy approaches zero** – P. Campbell
- LoI\_SP2\_Ph2 17 **Decay spectroscopy studies around  $^{110}\text{Zr}$  at DESIR** – S. Grévy

11:00 – 11:15 *Coffee Break*

**Open Meeting of SPIRAL2 SAC – 4**

**Lol Day 1 SPIRAL2 Phase 2**

*Chair: W. Gelletly – University of Surrey, UK*

11:15 – 13:00 (Each presentation 10'+5' for questions)

- LoI\_SP2\_Ph2 19 **Beta strength measurements in the  $^{100}\text{Sn}$  region** – A. Algora
- LoI\_SP2\_Ph2 20 **Beta strength measurements around the doubly-magic neutron-rich  $^{78}\text{Ni}$**  – J. L. Tain
- LoI\_SP2\_Ph2 52 **Beta Decay and the  $N = 82$  Waiting Point nuclei** - B. Rubio
- LoI\_SP2\_Ph2 21 **Coulomb excitation of neutron-rich Te, Sn and Xe nuclei beyond the  $N=82$  shell closure** – W. Korten
- LoI\_SP2\_Ph2 22 **Study of collective modes of excitations in the neutron rich Ba region via fusion-evaporation reactions** – A. Maj
- LoI\_SP2\_Ph2 23 **Search for Hyperdeformation at very high spin in Cd and Pd isotopes with Fusion-evaporation reaction using  $^{92}\text{Kr}$  beam** – A. Korichi
- LoI\_SP2\_Ph2 24 **Structure of Sb nuclei around  $^{132}\text{Sn}$  as a testing ground for realistic shell model interactions** - B. Fornal

13:00 – 14:30 *Lunch*

Thursday January 27<sup>th</sup>, 2011 - Afternoon

**Open Meeting of SPIRAL2 SAC – 5**

**Lol Day 1 SPIRAL2 Phase 2**

*Chair: D. Guillemaud-Mueller – CNRS, France*

14:30 – 16:30 (Each presentation 10'+5' for questions)

- LoI\_SP2\_Ph2 26 **Study of neutron-rich nuclei beyond N=50 using deep inelastic reactions** - G. Duchêne
- LoI\_SP2\_Ph2 27 **Spectroscopy studies around  $^{78}\text{Ni}$  and beyond N=50 via transfer and Coulomb excitation reactions** - G. de France
- LoI\_SP2\_Ph2 28 **Missing links in the series of the superdeformed lead nuclei along isospin content** - N. Redon
- LoI\_SP2\_Ph2 29 **Proton-neutron interactions and the onset of collectivity beyond  $^{132}\text{Sn}$  from g-factor measurements** - A. Stuchbery
- LoI\_SP2\_Ph2 30 **Determining the  $\alpha + ^{15}\text{O}$  radiative capture rate by measurement of the  $^6\text{Li}(^{15}\text{O},d)^{19}\text{Ne}$  reaction** - Ch. A. A. Digeat
- LoI\_SP2\_Ph2 31 **Transfer to bound and unbound states and its influence on reaction dynamics near Coulomb barrier** - A. Shrivastava
- LoI\_SP2\_Ph2 32 **Shape coexistence in neutron-rich Sr and Kr isotopes around N=60** - E. Clement
- LoI\_SP2\_Ph2 33 **Neutron shell evolution in weakly-bound neutron-rich  $^{134},^{135}\text{Sn}$  beams via (d,p) reactions** - V. Lapoux

16:30 – 17:00 *Coffee Break*

**Open Meeting of SPIRAL2 SAC – 6**

**Lol Day 1 SPIRAL2 Phase 2**

*Chair: N. Alamanos – CEA, France*

17:00 – 19:30 (Each presentation 10'+5' for questions)

- LoI\_SP2\_Ph2 34 **How Magic is  $^{78}\text{Ni}$**  - W. Catford
- LoI\_SP2\_Ph2 35 **Two-proton capture on  $^{15}\text{O}$  and protons correlation in two-proton emission from excited states of  $^{17}\text{Ne}$**  - M. Assie
- LoI\_SP2\_Ph2 36 **Study of pair transfer in the  $^{134}\text{Sn}$  nucleus via  $^{132}\text{Sn}(t,p)^{134}\text{Sn}$  reaction** - O. Sorlin
- LoI\_SP2\_Ph2 37 **Explosive hydrogen burning studies through the one-proton ( $^3\text{He},d$ ) transfer reaction: case of the  $^{25}\text{Al}(p, \gamma)^{26}\text{Si}$ ,  $^{60}\text{Zn}(p, \gamma)^{61}\text{Ga}$  and  $^{102}\text{In}(p, \gamma)^{103}\text{Sn}$  reactions** - N. De Sereville
- LoI\_SP2\_Ph2 38 **Investigation of the microscopic structure of Pygmy Dipole Resonances using transfer reactions** - D. Beaumel
- LoI\_SP2\_Ph2 39 **Exploration of cluster break-up in light exotic nuclei** - J.A. Scarpaci
- LoI\_SP2\_Ph2 40 **The role of isospin in the formation and decay of excited nuclei** - G. Casini
- LoI\_SP2\_Ph2 41 **Transport Properties of Isospin Asymmetric Nuclear Matter** - R. Lemmon
- LoI\_SP2\_Ph2 42 **Evolution of nuclear shell structure in the vicinity of  $^{78}\text{Ni}$  and  $^{132}\text{Sn}$  with ACTAR** - G.F. Grinyer
- LoI\_SP2\_Ph2 5 **Nuclear structure and electron shake-off in strontium, yttrium and zirconium** - P. Campbell

# “Maison d’hôtes” - GANIL

Friday January 28<sup>th</sup>, 2011 – Morning

## Open Meeting of SPIRAL2 SAC – 7

### Lol Day 1 SPIRAL2 Phase 2

*Chair: G. De Angelis – INFN, Italy*

9:00 – 11:30

(Each presentation 10'+5' for questions)

- Lol\_SP2\_Ph2 18 **Exploring the transition from order to chaos in the neutron deficient nuclei from  $28 \leq Z < 50$**  – Maria José G. Borge
- Lol\_SP2\_Ph2 43 **Measurement of proton-capture reactions in the rp-process nuclei  $^{60}\text{Zn}$  and  $^{64}\text{Ge}$  with ACTAR** - M. Caamaño
- Lol\_SP2\_Ph2 44 **Disappearance of the  $N = 20$  shell closure far from stability: investigation of  $^{27}\text{Ne}$  with resonant scattering in ACTAR** - A. Gillibert
- Lol\_SP2\_Ph2 45 **Gamma transition probability in unbound nuclei** - I. Stefan
- Lol\_SP2\_Ph2 46 **The ( $\alpha,p$ )-process in X-ray bursts: study of  $^{30}\text{S}(\alpha,p)^{33}\text{Cl}$  reaction rate with SPIRAL2 radioactive beam** - F. Hammache
- Lol\_SP2\_Ph2 47 **Study of  $^{19}\text{Ne}$  states near the  $^{18}\text{F}+p$  threshold ( $^{15}\text{O}+a$  resonant elastic)** - T. Davinson
- Lol\_SP2\_Ph2 48 **Study of  $^{19}\text{Ne}$  states near the  $^{18}\text{F}+p$  threshold ( $^{18}\text{Ne}(d,p)^{19}\text{Ne}^*$  reaction)** - T. Davinson
- Lol\_SP2\_Ph2 49 **The study of single-particle structure near doubly-magic  $^{132}\text{Sn}$**  – B. Kay
- Lol\_SP2\_Ph2 50 **Probing the pairing interaction through two-neutron transfer reactions** - D. Beaumel
- Lol\_SP2\_Ph2 51 **Spectroscopy studies toward  $^{140}\text{Sn}$  using Coulex and transfer reactions of RIBs** - R. Lozeva

## Closed Meeting of the SPIRAL2 SAC

12:00-19:00