



Dear Colleague,

Please find enclosed the last circular of the "Colloque GANIL" which will be held in Belgodère (Corsica, France) from September 25<sup>th</sup> to 30<sup>th</sup>, 2011.

In order to preserve the informal character of the colloquium and to stimulate presentation of controversial ideas, no proceedings will be published.

<b>SCIENTIFIC PROGRAMME</b>
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The workshop will begin on Monday September 26<sup>th</sup> at 8:30 am and will be closed on Friday September 30<sup>th</sup> at noon.

The programme will consist in invited talks, contributed talks and poster presentations.

To favour informal exchanges in a relaxed atmosphere, and to allow the organization of collaboration or other meetings, the afternoons will be free of talks up to 16:00.

For oral presentations, participants are requested to bring their presentation in a format such as PowerPoint or PDF, on an electronic medium such a CD/DVD or a USB key. A PC running Windows-XP as well as a Mac running OSX will be available. Speakers are strongly requested to use one of these computers. There will be no facility to display transparencies or photographic slides.

All speakers are requested to transfer their presentations on one of the above computers one day before their talk and during your registration on Sunday for Monday sessions. After each session, speakers should also provide the conference secretary a version of their presentation that can be uploaded on the web.

# SCIENTIFIC PROGRAMME

**Monday 26th September 2011**

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

**F. Staley, 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 – 19:25**

**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- 19:30**

**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 GANIL SC and SPIRAL2 SAC**  
**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)**  
EXOAM2

**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 joint session for the GANIL Scientific Council and  
SPIRAL2 Scientific Advisory Committee**

**14h00 - 18h00**

**19:15-19:45 PhD Award ceremony**

*20:30 Conference Dinner*

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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 – 12:55**

**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 – 17:20**

**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*

*\* to be confirmed*

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

#### POSTER SESSION

In view of the large number of contributions, a poster session will be organised on **Thursday 29th at 6:00 pm**. An introductory session will allow the poster authors to give a short presentation of their work, within a strictly limited time of 3 minutes and 2 transparencies per poster. Speakers are requested to bring their contribution in a common format (such as Powerpoint or PDF) on an electronic medium (CD, USB pen-drive, memory stick, etc...) **to be downloaded during your registration on Sunday**.

Posters may be presented in A0 format. They will be visible from Monday to Thursday. They can be pinned to the panels on Sunday evening at your arrival.

#### REGISTRATION DESK

Participants will be welcome in the afternoon of Sunday 25<sup>th</sup>, September from 5:00 pm. to 8:00 pm and during conference hours starting at 8:30 on the following days.

In case registration fees are not credited on time to the congress account, participants are advised to bring with them a copy of their proof of payment (bank transfer or other justification) or their acknowledgement of receipt.

## INTERNET

Several computers will be available for the participants.  
WIFI network is also available everywhere in the main building, not in the bedrooms.

## HOW TO REACH THE VVF

The resort village is 30 km from Calvi (40mn), 7 km from Ile Rousse (15mn) and 70 km from Bastia (60mn).

### - FROM THE CALVI AIRPORT

On Sunday 25<sup>th</sup> September, your transport to the colloquium site is organized by bus.

**Departure of the first shuttle : 15h15**

**Departure of the second shuttle : 17h00**

**The shuttle will have a sign "COLLOQUE GANIL 2011" and will be just outside the terminal.**

There is no regular bus connection between Calvi airport and the colloquium site.

### - TAXI

For those who will not arrive in time for the scheduled free shuttles, preferential taxi fares have been negotiated with a taxi company (Autocars LES SUPERS). Phone number : +33 (0)4 95 60 01 56. Specify that you are a participant of the colloque GANIL.

The organizers can book taxis on request (let us know by e-mail to [colloques@ganil.fr](mailto:colloques@ganil.fr) as soon as possible)

The fare for the journey Calvi airport-Belgodère will be 50€ (from 1 to 4 persons), to be shared.

### - BY CAR

From Calvi, take N199 via Ile Rousse, direction Lozari (don't follow "Belgodère" you would go to the village in the mountain)

From Bastia, take D81, direction Lozari (**NOT** Belgodère)

### GPS coordinates :

Latitude : 42.5885182

Longitude : 9.0136873

## GENERAL INFORMATION

Location : **Club Belambra**  
**Golfe de Lozari**  
**20226 Belgodère - Corsica**  
**France**  
**Tel : 00 33 4 95 63 00 60 (from abroad) 04 95 63 00 60 (from France)**  
**Fax : 00 33 4 95 63 00 79 (from abroad) 04 95 63 00 79 (from France)**  
Web site <http://www.belambra.co.uk>

**There is no possibility to withdraw money from the conference site. Please foresee before your arrival.**

Breakfast will be served every day from 7:00 to 8:30 am.

Coffee-breaks are planned on the bar terrace, outside the conference room.

- A welcome cocktail is planned on Monday 26<sup>th</sup> at 7:15 pm on the bar terrace
- The conference dinner is planned on Wednesday 28<sup>th</sup> at 8:30 pm
- A poster cocktail is planned on Thursday 29<sup>th</sup> at 6:30 pm

The resort village has an exceptional setting in a pine grove against a backdrop of mountains, a stone's throw from a transparent turquoise sea with a sandy beach,. There are 2 tennis courts, 3 beach-volley courts, 4 table tennis tables, 1 pétanque court and a large heated swimming pool. Don't forget tennis rackets, ping-pong rackets and bathing costumes.

At this time of the year, the average air temperature is 20/25°C, average sea water temperature is 22/23°C.

## EXCURSION

A tour to Calvi will take place on free Wednesday afternoon from 2:00pm to 6:00 pm  
Tickets will be supplied in the registration package for participants and registered companions. They will be required at the departure of the bus.

At the moment, there is no more place available. If you are interested, let us know as soon as possible and you will be put on a waiting list.

## DEPARTURE

The conference will end on Friday 30th September. A transfer service to the Airport will be provided. Information will be given during the colloquium.

Looking forward to seeing you in Belgodère.

## **The Organizing Committee**