



## SECOND CIRCULAR

**The XVIIth "colloque GANIL" will be held from September 25<sup>th</sup> to 30<sup>th</sup> 2011 in Belgodère Corsica (France).**

The purpose of the conference is to review and discuss the research carried out at GANIL and the related activities carried out at similar facilities around the world.

Traditionally the Colloque will cover the range of topics addressed at GANIL :

- **Nuclear structure**
- **Reaction mechanism**
- **Nuclear astrophysics**
- **Weak interaction**
- **Interdisciplinary research**

A particular emphasis will be put this year on “low energy physics with stable and radioactive beams @GANIL today and tomorrow; interplay between theory and experiment”.

In addition, Wednesday morning will be devoted to the open session of a common meeting of the SPIRAL 2 Scientific Advisory Committee and of the GANIL Scientific Council.

In order to preserve the informal character of the colloquium and to stimulate presentation of innovative ideas, no proceedings will be published. Review talks are planned with ample time scheduled for discussion. These reviews will be followed by shorter contributions presenting the latest results. A poster session will be organised to allow a complete discussion of the research programmes performed at GANIL in recent years. An introductory session will allow all participants presenting a poster to introduce their work. These “mini presentations” will be strictly limited to 3 minutes and 2 transparencies.

To favour the informal exchanges in a relaxed atmosphere, afternoons will be free of talks. **As usual, we also ask the participants to stay for the full 5 days of the workshop, in order to increase the interactions among participants.**

A few grants covering half of living expenses in a two-bedroom apartment will be available for graduate students. Please apply on the registration form.

**Please note that Corsica is a very popular destination and that flights to Calvi have to be booked well in advance.**

## DATES and LOCATION

The programme will open on Monday September 26<sup>th</sup> at **8:30** am and will close on Friday September 30<sup>th</sup> at noon.

The afternoon of Wednesday 28<sup>th</sup> September will be free.

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>

The workshop will be held in the resort Belambra village “Golfe de Lozari”, a seaside village close to Calvi.

## DEADLINES

Early bird Registration	July 25 <sup>th</sup> 2011 (extra fees after this date)
Last circular containing the final programme	September 9 <sup>th</sup> 2011

## PRELIMINARY SCIENTIFIC PROGRAMME

### Monday 26th September 2011

**8:30** – Opening address  
GANIL and the SPIRAL2 project

#### **Super Heavy Elements** **9:00 – 13:00**

**9h00-9h25 F. Hessberger – GSI Darmstadt, Germany (20+5)**  
Nuclear Structure of the Heaviest Elements – Investigated at GSI

**9h25-9h50 A. Popeko – JINR Dubna, Russia (20+5)**  
Synthesis of superheavy elements and perspectives

**9h50-10h15 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 weak interaction  
11:00 – 13:00**

**11h00-11h25 C. Hellweg, DLR Koln, Germany (20+5) (to be confirmed)**  
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 I. Monnet, CIMAP Caen, France (20+5)**  
In-situ X-Ray diffraction for ionic-covalent material study under swift heavy ion irradiation

**12h15-12h35 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

**12h35-13h00 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 reaction studies  
16:00 – 19:20**

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

*17:25 – 17:50 Coffee break*

**17h50-18h10 P. Asher, CENBG Gradignan, France (15+5)**  
Two-proton radioactivity studies with a TPC

**18h10-18h30 M. Assié, IPN Orsay, France (15+5)**

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

**18h30-18h50 F. Wamers, Institut für Kernphysik, TU Darmstadt, Germany**

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

**18h50-19h15 – M.J. Borge, CSIC Valencia, 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

*19:15 Welcome Cocktail*

*20h30 Dinner*

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## **Tuesday 27th September 2011**

### **Nuclear reaction studies**

**9:00 – 11 :00**

**9h00-9h20 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  $^{197}\text{Au}$

**9h20-9h40 Y. Penionzhkevich FLNR/JINR Dubna, Russia (15+5)**

Production of extremely neutron-rich fragments of light elements

**9h40-10h00 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

*10 :20 -10 :50 Coffee break*

### **Nuclear structure and gamma spectroscopy**

**10:50 – 13:00**

**10h50-11h15 H. – J. Wollersheim, GSI Darmstadt, Germany (20+5)**

The PRESPEC campaign

**11h15-11h35 L. Caceres, GANIL Caen, France**

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

**11h35-11h55 A. Matta, IPN Orsay, France**

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

**11h55-12h15 B. Avez, CENBG Gradignan, France**

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

**12h15-12h35 M. Vandebrouck , IPN Orsay, France (15+5)**

Giant resonances in exotic nuclei

**12h35-12h55M. Freer, University of Birmingham, United Kingdom (15+5)**

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

*13 :00 Lunch*

### **Nuclear structure**

**16:00- 19:30**

**16h00-16h25 F. Rotaru, University of Bucarest, Romania, (20+5)**

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

**16h25-16h50 H. Ueno, RIKEN, Japan, (20+5)**

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

**16h50-17h15 E. Farnea, INFN Padova, Italy (20+5)**

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

**17h15-17h35 R. Chevrier, CEA/DAM, Arpajon, France (15+5)**

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

*17:35 – 18:05 Coffee break*

**18h05-18h30 Speaker to be confirmed, (20+5)**

The pn coupling in N=Z nuclei

**18h30-18h55 P. Van Isacker, GANIL Caen, France (20+5)**

Neutron-proton pairs in N=Z nuclei

**18h55-19h15 G. Hupin, GANIL Caen, France (15+5)**

Pairing correlation in finite system

*20:30 Dinner*

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## **Wednesday 28 September 2011**

**Open joint session SC and SAC**

**Fundamental interactions and SPIRAL2 detectors**

**8:30 -10:40**

**B.Blank, CENBG (25+5)\***

Fundamental Interactions at GANIL

**G. Grinyer, GANIL (20+5)\***  
ACTAR

**B. Blank, CENBG, (20+5) \***  
DESIR

**G de France, GANIL (20+5) \***  
EXOAM2

**R. Bougault, LPC Caen (20+5) \***  
FAZIA

*10:40 – 11:00 Coffee break*

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

**D. Beaumel, IPN Orsay (20+5) \***  
GASPARD

**J.J. Valiente-Dobon, LNL Legnaro (20+5) \***  
NEDA

**A/ Maj, IFJ Krakow (20+5) \***  
PARIS

**X. Ledoux, SPN/DAM, Arpajon (12+3) \***  
NFS

**H. Savajols GANIL (12+3) \***  
S3

*12:45 - 14:00 Lunch*

*14:00 Departure of the Excursion*  
*Closed session for the CS + SAC*

**18:15- 19:15 M. Spiro, CERN, (45+15) \***  
(From infinitely small, to infinitely large)

**PhD award**  
**19:15 - 19:45**

*20:00 Conference Dinner*

**\* to be confirmed**

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## Thursday 29th September 2011

### Nuclear Structure

9:00 – 10:30

**9h00-9h25 O. Tarasov, MSU, USA, (20+5)**

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

**9h25-9h50 C. Barbieri Univ. Surrey, UK (20+5)**

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

**9h50-10h10 - J.-P. Ebran CEA/DAM Arpajon, France (15+5)**

Relativistic Hartree-Fock-Bogoliubov model for deformed nuclei

**10h10-10h35 D. Yordanov, CERN Switzerland, (15+5)**

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

*10:35 – 11:00 Coffee break*

### Astrophysics

11:00 – 13:00

**11h00-11h25 J. Jose, University Politecnica de Catalunya, Spain, (20+5)**

Review on novae and X-ray bursts

**11h25-11h50 A.Murphy, University of Edinburgh, U.K., (20+5)**

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

**11h50-12h15 F. Hammache, IPN Orsay, France, (20+5)**

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

**12h15-12h40 P. Ujic, GANIL Caen, France**

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

**12h40-13h00 S. Hilaire, CEA/DAM Arpajon, France (15+5)**

Nuclear level densities and the D1M Gogny force

*13:00 Lunch*

### Nuclear structure

16:00 – 17:00

**16h-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. Duchene, IPHC Strasbourg, France (15+5)**

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

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

Dipole excitations in the islands of inversion

*17:20 – 17:40 Coffee break*

**17:40** Short presentations of posters

**Poster Session**

**Cocktail**

**18:20 - 19:45**

*20:00 dinner*

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## **Friday 30th September 2011**

**Future developments**

**9:00 – 12 :00**

**9h00- 9h25 H. Stoecker, GSI Darmstadt, Germany (20+5)**

FAIR and GSI: The science and the roadmap

**9h25-9h50 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

**9h50-10h15 J. Colin, LPC Caen, France (20+5)**

Nuclear Physics and Hadrontherapy

*10:15 – 10:45 Coffee break*

**10h45-11h05 G. Lhersonneau, GANIL, France**

In-target production measurements for SPIRAL2

**11h05-11h25 A. Gillibert, CEA Irfu, Saclay, France**

CHyMENE: a new solid hydrogen target for low energy beams

**11h25-11h45 P. Delahaye, GANIL, France**

SPIRAL upgrade

*12 :00 Lunch*

**End of the meeting**

**13h30 – departure to the airport**

## POSTER SESSION

A poster session will be organised on Thursday 29<sup>th</sup> September to allow a complete discussion of the research programmes performed at GANIL in recent years. An introductory session will allow all participants presenting a poster to briefly describe their work. These “mini presentations” will be strictly limited to 3 minutes and 2 transparencies.

## EXCURSION

A tour to Calvi is proposed for the free Wednesday afternoon. If you are interested, please indicate your choice in the “registration form”. **Price 24€ per person.**

Drive to the old villages of Balagne : This region which was the orchard of Corsica is still fertile and luminous in an amphitheater of hills and plains. In this setting, a few “villages crèches” are nestled, surrounded by olive trees, almond trees and prickly pears.

Visit of Calvi, City of Christophe Colomb, and its citadel erected on a promontory jutting out between the Gulf of Calvi and Revellata. Splendid views of the surrounding mountains. Calvi is one of the most beautiful resorts situated on the northwest coast of the Haute-Corse in the microregion of Balagne. Built by the Genoese in 1268, on a rocky outcrop overlooking the beautiful bay of the same name, military stronghold of primary importance, Calvi is famous for its enchanting setting, the historic Citadel, its marina, and its bay. Its cobblestone pedestrian streets and beaches make it a tourist paradise.

Free time to stroll and back to Lozari.

02:00 pm: Departure of the bus

05:45 pm: Arrival at the colloquium site

## REGISTRATION

The registration fee includes accommodation and full board from September 25 (Sunday dinner) to September 30, (Friday lunch), coffee breaks, welcome and poster cocktail and conference dinner.

**If received before July 25<sup>th</sup> :**

**720 € (incl. VAT 19,6%) for single occupation of an apartment**

**620 € (incl. VAT 19,6 %) for each person in a 2 bed-room apartment**

**If received after July 25<sup>th</sup> :**

**770 € (incl. VAT 19,6%) for single occupation of an apartment**

**670 € (incl. VAT 19,6 %) for each person in a shared 2 bed-room apartment**

**Registration will be valid only if accompanied by corresponding payment**

(bank cheque or a duplicate of the bank transfer order raised by the bank in Euros). Registrations will be officially acknowledged after receipt of the fees.

Participants are invited to register using the registration form available at <https://pro.ganil-spiral2.eu/events/cw/colloques/2011/registration>

The prices indicated above include VAT.

A few grants covering half of living expenses in a two-bedroom apartment will be available for graduate students. Please apply on the registration form.

We will not be able to provide any additional financial support.

## TRAVEL INFORMATION

**Participants should organise their own voyage to Belgodère.**

**Please note that Corsica is a very popular destination and that flights to Calvi have to be booked well in advance.**

### ◆ **By plane To Calvi**

The conference site is 30 kms (40mn) from Calvi airport

**A group flight can be organised for a minimum of 60 people.**

If you are interested in this flight, send an email to [colloques@ganil.fr](mailto:colloques@ganil.fr) **BEFORE Friday 1st July.**

The flight will have to be paid before **July 22nd**. After that date, the booking will be automatically cancelled.

25 September 2011	PARIS / CALVI	AF 4275	13H15 / 14h50
30 September 2011	CALVI / PARIS	AF 7579	15H35 /17H05

**PRIX TTC : 240 € including 65 € taxes**

25 septembre 2011	PARIS / CALVI	AF 7576	14H40 / 16h15
30 septembre 2011	CALVI / PARIS	AF 7579	15H35 / 17H05

**PRIX TTC : 260 € including 65 € taxes**

We draw your attention to the fact that there are few flights PARIS / Calvi / PARIS and the desired dates are highly coveted.

<http://www.airfrance.com/indexCOM.html>

<http://www.calvi.aeroport.fr/AeroportCal/accueilAeroCal.php>

**Shuttles will be arranged from and to Calvi airport on Sunday 25<sup>th</sup> September and Friday 30<sup>th</sup>, September. It is very important to specify (on the registration form) if you will use the shuttles to be able to organize them.**

### On Sunday September 25<sup>th</sup> 2011

A free shuttle to the conference site will leave Calvi AIRPORT at 17:00.

Planes arriving from		
MARSEILLE	AF4718 AIR FRANCE	09h00 10h00
NICE	AF4760 AIR FRANCE	11h45 12h30
LONDRES STANSTED	ZT8751 TITAN AIRWAYS	11h45 13h10
PARIS ORLY	AF4274 AIR FRANCE	13h15 14h50
NICE	AF4784 AIR FRANCE	14h50 15h35
PARIS ORLY	AF7576 AIR FRANCE	14h40 16h15
NICE	AF4786 AIR FRANCE	15h45 16h30

### On Friday September 30<sup>th</sup>, 2011

A free shuttle to Calvi AIRPORT will leave the conference site at 13 :00

PARIS ORLY	AF7579 AIR FRANCE	15h40 17h10
MARSEILLE	AF4723 AIR FRANCE	16h05 17h05

**PLEASE NOTE THAT THERE IS NO BUS CONNECTION BETWEEN CALVI airport, and the COLLOQUIUM SITE !**

**EXCEPT FOR THE TWO FREE SHUTTLES MENTIONNED ABOVE, PARTICIPANTS HAVE TO PAY THEIR TRAVEL TO BELGODERE (taxi, bus, train ...)**

You will have, first, to take a taxi to Calvi (10mn) then a bus or a train and get off at "Ile Rousse" (~45mn). Then take a taxi to Lozari. (10mn)

Train and bus schedules are not yet known. They will be published early July.

For information 2 buses or trains will be available per day.

<http://www.train-corse.com/schedule.html>

**Details will be given in the last circular.**

- **Taxi :**

Taxi fares have been negotiated for those who will not arrive at the scheduled free shuttles.

The cost has to be paid by the participants.

If you want us to organize your transfer, indicate your arrival and departure time by sending an email to [colloques@ganil.fr](mailto:colloques@ganil.fr)

For information, a taxi fare from

- Calvi is 50 €. It will take about 40 mn.
- Ile Rousse is 15€. It will take about 10 mn
- Bastia is 100€. It will take about 60 mn.

- **By ferry :**

Daily round-trip routes from France (Toulon, Nice, Marseille) and Italy (Savone, Livourne) to Calvi and Ile Rousse (7km from colloquium site) with [CORSICAFERRIES](#) or [SNM](#)

- **By car :**

From Calvi, take N199 via Ile Rousse, direction Lozari

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

## **PAYMENT**

All payments must be made in Euros :

- **By Credit card**

Only “carte bleue”, “Visa” and “Mastercards” will be accepted.

Registration by credit card will be automatically acknowledged after receipt of the fees.

- **by bank transfer to the account :**

GIE GANIL

Account number : 00020247437

Bank SOCIETE GENERALE (3003) Agence Caen (00451)

3003 00451 00020247437 33

IBAN FR76 30003 00451 00020247437 33

BIC/SWIFT code: SOGEFRPP

**It is very important that you ask your bank to specify your name on the transfer**

## **CANCELLATION**

In case of written cancellation before August 24th, the registration fee will be refunded. **After this date no refund will be possible.**

## **FINAL CIRCULAR**

The final circular will be sent around September 9<sup>th</sup> to the registered participants. It will include the final scientific programme and practical information.