



## **FUSTIPEN Topical Meeting**

"Recent Progress in the Nuclear Shell Model"

June 19-20, 2014, GANIL, Caen, France

Organizers:

Stuart Pittel (University of Delaware) and Piet Van Isacker (GANIL)

# The French-US Theory Institute for Physics of Exotic Nuclei (FUSTIPEN)

## Governing Board:

Ani Aprahamian (Univ. of Notre Dame), Bruce Barrett (Univ. of Arizona), Bertram Blank (CENBG), Yorick Blumenfeld (IPN Orsay), Thomas Duguet (CEA Saclay), Robert Janssens (ANL) ) **co-Director**, Witek Nazarewicz (Univ. of Tennessee/ORNL) **Principal Investigator**, Filomena Nunes (Michigan State Univ.), Nathalie Pillet (Bruyeres-le-Chatel), Marek Ploszajczak (GANIL) **co-Director**

## Goal:

- To broaden our knowledge of nuclear properties and reactions
- To deliver an international venue for research on the physics of nuclei

FUSTIPEN supports 10-15 travel grants/year for US based nuclear physicists to travel to GANIL for collaborations with French nuclear physicists

Funding is provided by the Office of Nuclear Physics of the U. S. Department of Energy

French grant supplies funding for physicists from France and other countries to visit GANIL to collaborate with U.S. FUSTIPEN visitors

Both theory-theory and theory-experimental collaborations are encouraged

**WEB page:** <http://fustipen.ganil.fr/>

## FUSTIPEN inaugurated the activity in January 2011

~40 U.S. physicists and ~70 physicists from other countries traveled to FUSTIPEN

### FUSTIPEN Topical Meetings:

Bridging the Atlantic with exotic isotope physics, 1/18-19/2011

Neutron-proton pair correlations in  $N \sim Z$  nuclei, 2/3/2011

Effective field theories for nuclear structure studies, 3/3/2011

Probing two-nucleon correlations using reactions, 3/18/2011

Structure and reactions at the drip lines, 5/24-5/25, 2011

Resonance spectroscopy and nuclear astrophysics with radioactive ion beams, 6/1, 2011

Theory of nuclear fission, 1/04-1/06, 2012

Understanding light nuclei microscopically, 3/20-3/21, 2012

The structure of heavy nuclei, 4/16-4/17, 2012

Low-energy nuclear collective modes and excitations, 5/24-5/25, 2012

The microscopic description of light nuclei, 3/11-3/12, 2013

Multidimensional stochastic treatment of fission dynamics, 5/24, 2013

Dipole collectivity in nuclei, 10/3-10/4, 2013

Understanding nuclear structure and reactions microscopically, 3/17-3/21, 2014

Structure of the neutron star crust: experimental and observational signatures, 5/26-5/27, 2014

Recent progress in the nuclear shell model, 6/19-6/20, 2014

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### **Series of lectures:**

- Introduction to nuclear effective field theories (U. van Kolck)
- Challenges in nuclear astrophysics (C. Bertulani)

### **FUSTIPEN colloquia**

### **TALENT: Training in Advanced Low Energy Nuclear Theory**

- Theory for exploring nuclear structure experiments, 08/11–08/29, 2014  
M. Caprio, R. Casten, J. Jolie, A. Macchiavelli, N. Pietralla, P. Van Isacker (teachers)

**WEB page:** <http://www.nucleartalent.org>

## Practical issues

- Lunches...
- Reimbursements...
- Workshop photo: today at 13:20 outside the main building
- Dinner at “L’Escargot Entete”: today at 20:00  
Meeting in front of GANIL’s main entrance at 19:20

Thursday, June 19, 2014

9:30 Registration

9:45 - 10:00 Welcoming remarks

*Chair: Piet Van Isacker*

10:00 - 10:50 Angela Gargano (INFN, Naples)  
Shell-model calculations with modern realistic interactions

10:50 - 11:10 Coffee break

11:10 - 12:00 Frédéric Nowacki (Université de Strasbourg, IPHC)  
Correlations along the N=Z line

12:00 - 13:30 Lunch

*Chair: Navin Alahari*

13:30 - 14:20 John Wood (Georgia Institute of Technology)  
Coexistence

14:20 - 15:10 Alfredo Poves (Universidad Autónoma de Madrid)  
Coexistence in the shell model and its SU(3) roots

15:10 - 15:30 Coffee break

*Chair: Stuart Pittel*

15:30 - 15:55 Andrey Blazhev (University of Cologne)  
A shell-model study of the light cadmium isotopes

15:55 - 16:45 Takaharu Otsuka (University of Tokyo)  
Shell model and nuclear shapes

16:45 - 17:35 Hubert Grawe (GSI, Darmstadt)  
Monopole driven shell evolution - Experimental view on new and lost shells

17:35 - Summary discussion

20:00 Conference dinner  
Restaurant L'Escargot Entete