



FUSTIPEN Topical Meeting

« Challenges in the microscopic description of nuclear large amplitude collective dynamics »

October 13-14, 2014, GANIL, Caen, France

Second circular

While rather well understood phenomenologically, the description of nuclear process like fusion or fission challenges microscopic theories. A complete understanding of these large amplitude collective motion requires the inclusion in a many-body framework of nuclear structure effects, tunnelling in multi-dimensional collective space as well as the associated quantum and thermal fluctuations.

We propose to hold a two-day workshop to discuss some of the recent advances on these topics and to point the way to future studies. Key themes of the workshop will include the fusion process, the fission process, key observables on which theory and experiments can meet. The workshop will include talks on recent theoretical developments in the field and on related experimental studies.

We invite those participants, who believe that they can contribute to discussions to contact us at fustipen@ganil.fr. In line with previous workshops of this kind, the format of the workshop will be kept informal with ample time for discussion.

The meeting is scheduled to start at 9:00 on Monday, October 13th and to finish around 18:00 on Tuesday, October 14th. The session will take place in room 105 of the GANIL main building.

Upon arrival at GANIL, you are requested first to contact the guardian at the entrance of GANIL and then proceed to the GANIL main building, room 105, for the registration. Personal laptops will be able to connect to the wireless network.

To register for the meeting, please fill in the [registration form](#). We are asking even those holding a GANIL badge to register so that an accurate count can be obtained for the coffee breaks. There is no registration fee. A French FUSTIPEN grant can provide local support for French-based physicists interested in the topic of the meeting.

Program of the Topical Meeting

«Challenges in the microscopic description of nuclear large amplitude collective dynamics »

Monday, October 13, 2014

9:00 Registration

Chairman: Marek Ploszajczak

9:15 Welcome

9:30 – 10:00 Denis Lacroix (IPN Orsay)
Some recent progress in dynamical mean-field theories

10:10 – 10:40 Coffee break

10:40 – 11:10 Fanny Farget (GANIL)
Fission investigations in inverse kinematics: from fission- to scission-fragment characterization

11:20 – 11:50 Michal Kowal (Institute of Nuclear Research, Swierk)
Is the nuclear large amplitude collective dynamics adiabatic or non-adiabatic?

12:00 – 13:00 Lunch

Chairman: Fanny Farget

13:00 – 13:30 Dieter Ackermann (GSI)
Superheavy elements - Nuclear structure at its extremes

13:40 – 14:10 Laurent Tassan-Got (IPN Orsay)
Fission fragment angular distribution and isotopic distributions

14:20 – 14:50 Janusz Skalski (NCNR Warsaw)
Ways to treat spontaneous & other fission from instanton perspective

15:00 – 15:30 Stefano Panebianco (CEA Saclay)
The SPY model: how the microscopic description of the nucleus can shed some light on fission

15:40 – 16:00 Coffee break

16:00 – 16:30 Michael Bender (CENBG Bordeaux)
On the parametrization of Skyrme interactions for fission barrier studies

16:40 Discussion session: Experimental challenges and key observables for fission
*Convener: Dieter Ackermann, GSI
Laurent Tassan-Got, IPN Orsay*

20:00 Conference dinner

Tuesday, October 14, 2014

Chairman: Michael Bender

9:00 – 9:30 Sakir Ayik (Tennessee Technological University)
Quantal Corrections to Mean-Field Dynamics

9:40 – 10:10 David Boilley (GANIL)
Can we constrain the fusion hindrance?

10:20 – 10:50 Coffee break

10:50 – 11:20 Kosuke Nomura (GANIL)
Linking the nuclear mean field and the interacting boson model for collective states

11:30 – 12:00 Michal Warda (Marie-Curie University, Lublin)
Scission point nuclear shape and fragment mass yields

12:10 – 12:40 Béatriz Jurado (CENBG, Bordeaux)
The general fission model

12:50 – 13:45 Lunch

Chairman: Sakir Ayik

13:45 – 14:15 Piotr Magierski (Warsaw University of Technology)
Nuclear Reactions within Time Dependent Superfluid Local Density Approximation

14:25 – 14:55 Samuel A. Giuliani (GSI)
Spontaneous fission: pairing impact and the least action approach

15:05 – 15:35 Paul D. Stevenson (University of Surrey)
Explorations of fission with TDHF

15:45 – 16:15 Diego Gruyer (GANIL)
Nuclear reaction dynamics: from fission to multifragmentation

16:25 – 16:45 Coffee break

16:45 Discussion: Theoretical challenges: dynamics vs static description
 of large-amplitude collective motion
*Convener: Piotr Magierski, Warsaw University of Technology
 Michal Warda, Marie-Curie University, Lublin*

18:00 End of the Meeting

All the information to reach GANIL can be found at the address:
http://fustipen.ganil.fr/practical/Practical_info.pdf

If you have any question concerning your arrival and stay in Caen, or your participation in the meeting, please do not hesitate to contact us at fustipen@ganil.fr.

We hope to see you soon at GANIL at the occasion of this topical meeting.

Sakir Ayik (Tennessee Technological University)

Denis Lacroix (IPN Orsay)

Marek Ploszajczak (GANIL)