Scientific program of NuSYM17

Sunday September 3\textsuperscript{rd}, 2017

16:00- 19:00 \quad \textit{Registration at the Workshop Desk} (GANIL Guest House)

Monday September 4\textsuperscript{th}, 2017

08:00 - 8:30 \quad \textbf{Navin Alahari} (Director of GANIL)
   \quad \textit{Welcome and presentation of the GANIL facilities}

\textbf{Session 1: Theories of nuclear reactions and symmetry energy 1:}
   \quad \textit{Chairman: Pawel Danielewicz} (NSCL, Michigan State University, East Lansing, USA)

08:30 - 09:05 \quad \textbf{Hermann Wolter} (University of Munich, GERMANY)
   \quad \textit{Transport approaches and reaction studies of the equation of state of asymmetric nuclear matter}

09:05 - 09:35 \quad \textbf{Jun Xu} (Shanghai Institute of Applied Physics, CHINA)
   \quad \textit{Spin dynamics within a BUU approach}

09:35 - 10:00 \quad \textbf{Yongjia Wang} (Huzhou University, CHINA)
   \quad \textit{Study of the symmetry energy from the rapidity-dependent elliptic flow}

10:00 - 10:30 \quad \textit{Coffee break}

\textbf{Session 2: Theories of nuclear reactions and symmetry energy 2:}
   \quad \textit{Chairman: Hermann Wolter} (University of Munich, GERMANY)

10:30 - 11:00 \quad \textbf{Lie-Wen Chen} (Shanghai Jiao Tong University, CHINA)
   \quad \textit{Empirical information on nuclear matter fourth-order symmetry energy from an extended nuclear mass formula}

11:00 - 11:30 \quad \textbf{Stefan Typel} (Institut für Kernphysik, TU Darmstadt & GSI, GERMANY)
   \quad \textit{Equations of state of RMF models with different parametrisations of density dependent couplings}

11:30 - 11:50 \quad \textbf{Yoritaka Iwata} (Tokyo Institute of Technology, JAPAN)
   \quad \textit{Nuclear matter property based on the TDDFT}

11:50 - 12:10 \quad \textbf{Tusar Routray} (Sambalpur University, Odisha, INDIA)
   \quad \textit{Nuclear Symmetry Energy from the Study of Nuclear Matter and Finite Nuclei using a Finite Range Simple Effective Interaction}

12:10 - 12:30 \quad \textbf{Wei-Zhou Jiang} (Southeast University, Nanjing, CHINA)
   \quad \textit{Properties of Lambda hypernuclei to constrain the symmetry energy}
12:30 - 14:00  Lunch at the GANIL restaurant

**Session 3: Correlation & clustering**

*Chairman: Lie-Wen Chen* (Shanghai Jiao Tong University, CHINA)

14:00 - 14:30  Pawel Danielewicz (NSCL, Michigan State University, East Lansing, USA)
**Dynamical clusters in transport theories**

14:30 - 15:00  Akira Ono (Tohoku University Sendai, JAPAN)
**Light clusters and light nuclei in collision dynamics**

15:00 - 15:25  Angelo Pagano (INFN, Sezione di Catania, ITALY)
**Density and time scale determinations in Heavy Ion collisions at medium energies**

15:25 - 15:50  Arnaud Le Fèvre (GSI, Darmstadt, GERMANY)
**Detecting clusters in phase space distributions of transport models from Fermi to relativistic energies**

15:50 - 16:20  Coffee break

**Session 4: Symmetry energy in nuclear structure 1**

*Chairwoman: Francesca Gulminelli* (Laboratoire de Physique Corpusculaire, Caen, FRANCE)

16:20 - 16:45  Kent Paschke (University of Virginia, USA)
**PREX-II and CREX: Measuring the Neutron Skin of Pb-208 and Ca-48 with Parity Violation in Electron Scattering**

16:45 - 17:10  Concettina Sfienti (Institut für Kernphysik, J. Gutenberg University, Mainz, GERMANY)
**Status and Prospect of Rn measurements at Mainz**

17:10 - 17:35  Byungsik Hong (Korea University, SOUTH KOREA)
**Status of RAON and LAMPS in Korea**

17:35 - 18:00  Paolo Russotto (INFN-Laboratori Nazionali del Sud, Catania, ITALY)
**Plans for studying high-density symmetry energy at GSI**

18:00 - 18:20  Nils Paar (Faculty of Science University of Zagreb, CROATIA)
**Constraining the symmetry energy based on relativistic point coupling interactions and excitations in finite nuclei**

18:20  **End of the session**

18:30  **Welcome cocktail**
Tuesday September 5th, 2017

Session 5: Symmetry energy in nuclear structure 2
Chairman: Marek Ploszajczak (GANIL, Caen, France)

08:30 - 09:00  Maria Colonna (Laboratori Nazionali del Sud, INFN, Catania, ITALY)
Collective excitations as probe of the nuclear effective interaction

09:00 - 09:25  Sergey Sukhoruchkin (Petersburg Kurchatov Institute, RUSSIA)
Symmetry-motivated tuning effect in particle masses and nuclear data

09:25 - 09:45  Xu Chang (Nanjing University, CHINA)
Nuclear symmetry energy constrained by proton/cluster radioactivity

09:45 - 10:05  Hua Zheng (Laboratori Nazionali del Sud, INFN, Catania, ITALY)
Classical vs quantal effects in equilibrium and nonequilibrium dynamics

10:05 - 10:30  Sandrine Courtin (Institut Pluridi. Hubert Curien, Strasbourg, FRANCE)
The 12C+12C and 12C+16O fusion reactions: clusters and astrophysics

10:30 - 11:00  Coffee break

Session 6: Transport codes comparison:
Chairwoman: Betty Tsang (NSCL, Michigan State University, East Lansing, USA)

11:00 - 11:15  Jun Xu (Shanghai Institute of Applied Physics, CHINA)
Current status of Transport code Evaluation project (TCEP)

11:15 - 11:50  YingXun Zhang (China Institute of Atomic Energy, CHINA)
Results of TCEP HW1 – NN collisions evaluation

11:50 - 12:10  Maria Colonna (Laboratori Nazionali del Sud, INFN, Catania, ITALY)
Status of HW 2 – Mean field evaluation

12:10 - 12:30  Akira Ono (Tohoku University Sendai, JAPAN)
Status of HW3 – Pion Production

12:30 - 14:00  Lunch at the GANIL restaurant
Session 7: Influence of the symmetry energy on the structure of objects and processes in the Femto and astrophysical scales 1

Chairwoman: Anthea Fantina (GANIL, Caen, FRANCE)

14:00 - 14:30 Paolo Napolitani (IPN-Orsay, FRANCE)
Inhomogeneity growth in two-component fermionic systems

14:30 - 14:55 Claudio Dorso (FCEN, University of Buenos Aires, ARGENTINA)
Fragmentation of Neutron Star Pasta

14:55 - 15:20 Francesca Gulminelli (Laboratoire de Physique Corpusculaire de Caen, FRANCE)
Empirical equation of state for dense nucleonic matter and predictions for NS properties

15:20 - 15:40 Xavier Vinas (Facultat de Física, Universitat de Barcelona, SPAIN)
Crust-core transition in neutron stars revisited

15:40 - 16:00 Debarati Chatterjee (Laboratoire de Physique Corpusculaire de Caen, FRANCE)
A unified nuclear Equation of State based on empirical parameters constrained by nuclear observables

16:00 - 16:20 Wei Sina (Southeast University, Nanjing, CHINA)
The properties of symmetry energy in the saturated Nambu-Jona-Lasinio model

16:20 - 16:50 Coffee break

Session 8: Influence of the symmetry energy on the structure of objects and processes in the Femto and astrophysical scales 2

Chairman: Jerzy Lukasik (Institute of Nuclear Physics PAN, POLAND)

16:50 - 17:15 Sebastian Kubis (Kraków University of Technology, POLAND)
Geometric approach to pasta phases

17:15 - 17:35 Tsuyoshi Miyatsu (Tokyo University of Science, JAPAN)
Density and momentum dependence of nuclear symmetry energy in the relativistic Hartree-Fock approximation

17:35 - 17:55 Kazuhiro Oyamatsu (Aichi Shukutoku University, JAPAN)
How the structure of nuclei and neutron stars depends on the pressure of asymmetric nuclear matter

17:55 - 18:15 Youngman Kim (Institute for Basic Science, Daejeon, SOUTH KOREA)
Delta matter in asymmetric dense matter

18:15 - 18:35 Shougaijam Singh (University of Delhi, INDIA)
Effect of amplitude in compact star rotation by cosmological parameter

18:35 End of the session
Wednesday September 6th, 2017

Session 9: Symmetry energy & Pion production 1
Chairman: Wolfgang Trautmann (GSI, Darmstadt, GERMANY)

08:30 - 09:00  Che-Ming Ko (Texas A&M University, College Station, USA)
Pion production in HIC

09:00 - 09:25  Dan Cozma (IFIN-HH Bucharest, ROMANIA)
Constraining the Density Dependence of the Symmetry Energy Using the Multiplicity and Average P_T Ratios of Charged Pions

09:25 - 09:55  Christoph Hartnack (Subatech, Nantes, FRANCE)
Pion production in the IQMD transport model

09:55 - 10:15  Ikeno Natsumi (Tottori University, JAPAN)
Pauli blocking effects on pion production in central collisions of neutron-rich nuclei

10:15 - 10:45  Coffee break

Session 10: Symmetry energy & Pion production 2
Chairman: Remi Bougault (Laboratoire de Physique Corpusculaire de Caen, FRANCE)

10:45 - 11:15  Betty Tsang (Michigan State University, East Lansing, USA)
Pion production in rare-isotope collisions

11:15 - 11:35  Kaneko Masanori (Kyoto University & RIKEN Nishina Center, JAPAN)
Analysis status on the Kyoto multiplicity array for the SPIRIT experiment

11:35 - 11:55  Nishimura Mizuki (RIKEN Nishina Center, JAPAN)
Collective Flow Analysis in Sn + Sn collisions at 270MeV/u with S²RT-TPC

11:55 - 12:20  Zhaoqing Feng (Institute of Modern Physics, Chin. Acad. of Sci., CHINA)
Particle production and isospin effect in antiproton-nucleus collisions

12:20 - 13:45  Lunch at the GANIL restaurant

14:00  Departure for the excursion (bus next to the GANIL Guest house)

19:30  Arrival from the excursion (bus arrival at the GANIL Guest house)

20:00  Bus to the social dinner

20:30  Social dinner (Center of town)
Thursday September 7th, 2017

Session 11: Constraining Symmetry energy with heavy-ion reactions 1

Chairman: Byungsik Hong (Korea University, SOUTH KOREA)

09:00 - 09:25  Sherry Yennello (Texas A&M University College Station, USA)
NZ Equilibration in Fermi-Energy HI Collisions: What can we learn about the EOS?

09:25 - 09:50  Zhigang Xiao (Tsinghua University, Beijing, CHINA)
Experimental studies on the isospin transport and the asymmetric nuclear equation of state in heavy ion collisions

09:50 - 10:15  Olivier Lopez (Laboratoire de Physique Corpusculaire de Caen, FRANCE)
Recent results from INDRA & FAZIA

10:15 - 10:45  Coffee break

Session 12: Constraining Symmetry energy with heavy-ion reactions 2

Chairman: John Frankland (GANIL, Caen, FRANCE)

10:45 - 11:10  Yvonne Leifels (GSI, Darmstadt, GERMANY)
Opportunities at GSI/FAIR

11:10 - 11:35  Jerzy Lukasik (Institute of Nuclear Physics PAN, POLAND)
KRATTA, KATANA and KRAB

11:35 - 12:00  Dominique Durand (Laboratoire de Physique Corpusculaire de Caen, FRANCE)
ELIE, a phenomenological model for central collisions in the intermediate energy range: comparison with INDRA data

12:00 - 12:20  Patrick St-Onge (GANIL, Caen, FRANCE)
Influence of neutron enrichment on de-excitation properties of palladium isotopes

12:20 - 13:45  Lunch at the GANIL restaurant
**Session 13: Constraining Symmetry energy with heavy-ion reactions 3**

*Chairman: Giuseppe Verde* (INFN, Sezione di Catania, ITALY & IPN Orsay, FRANCE)

13:45 - 14:15  **Bill Lynch** (Michigan State University, East Lansing, USA)
Overview of experimental searches of the symmetry energy and of n/p mass splitting.

14:15 - 14:40  **Isobe Tadaaki** (RIKEN, Nishina Center, JAPAN)
Analysis of SPIRIT experimental data: measurement of charged particles and neutrons in heavy RI collisions.

14:40 - 15:05  **Jack Winkelbauer** (Michigan State University & Los Alamos National Lab., USA)
Impact Parameter Dependence of Isospin Diffusion in Peripheral Sn+Sn Collisions.

15:05 - 15:30  **Alan McIntosh** (Texas A&M University, College Station, USA)
Progress in experimental investigations of the nuclear EoS.

15:30 – 16:00  Coffee break

**Session 14 : Constraining Symmetry energy with heavy-ion reactions 4**

*Chairwoman: Yvonne Leifels* (GSI, Darmstadt, GERMANY)

16:00 - 16:20  **Pierre Morfouace** (NSCL, Michigan State University, East Lansing, USA)
Constraining the symmetry energy with heavy-ion collisions and Bayesian analysis.

16:20 - 16:40  **Giuseppe Politi** (Dipartimento di Fisica e sezione INFN, Catania, ITALY)
Isospin influence on Fragments production in 78K r +40Ca and 86K r +48Ca collisions at 10 MeV/nucleon.

16:40 - 17:00  **Simone Valdré** (GANIL, Caen, FRANCE)
Recent results from the ISOFAZIA experiment.

17:00 - 17:20  **Kyle Brown** (NSCL, Michigan State University, East Lansing, USA)
Constraining the effective mass dependence of the Nuclear Symmetry Energy.

17:20 - 18:00  **Wolfgang Trautmann** (GSI, Darmstadt, GERMANY)
Concluding Remarks.

18:00 - 18:15  Closing NuSYM17
One-day satellite transport workshop

09:00 - 10:30    Finalize the Box-Cascade paper
10:30 - 11:00    Coffee break
11:00 - 12:00    Update of Box-Vlasov results
12:00 - 13:30    Lunch
13:30 - 14:30    Update of Box-Vlasov results
14:30 - 16:30    Update of Box-Pion results
16:30 - 17:00    Coffee break
17:00 - 18:00    Future activities of transport comparison project