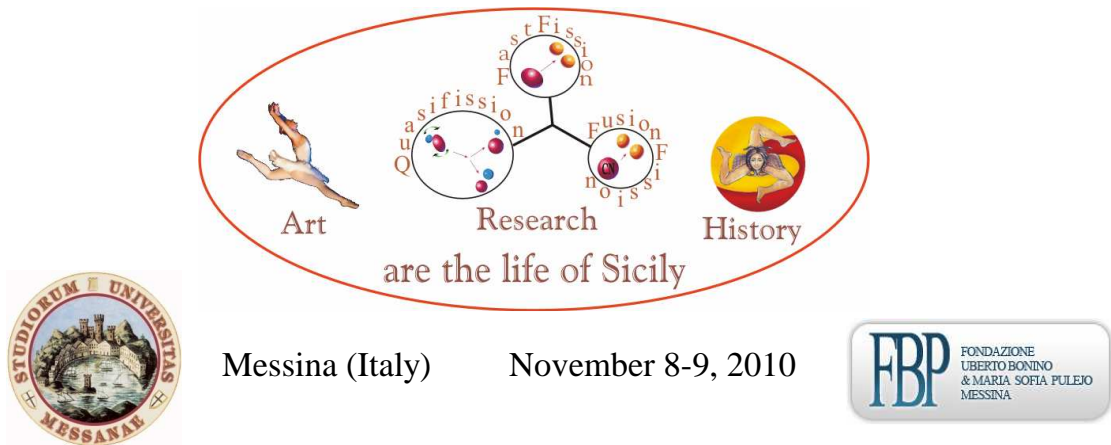


International Symposium
Quasifission Process in Heavy Ion Reactions



Messina (Italy)

November 8-9, 2010

First Circular

Chairman : Giorgio Giardina (Messina)

Co-Chairman: Avazbek Nasirov (Dubna)

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Organized by:

University of Messina

Fondazione Bonino-Pulejo (Messina)

Web-site

<http://nucleo.unime.it/symp2010>

The synthesis of superheavy elements and the study of exotic nuclei, far from the valley of the beta stability, present an important challenge for nuclear physics. Nuclear models have to be radically improved in order to interpret the experimental data and to clarify the reaction mechanisms leading to the formation of the observed products.

The difficulties and ambiguity at separation of the fusion-fission and quasifission products lead to fusion cross sections with large inaccuracy. As well as the fast fission products can increase the range of inaccuracy. Description of these fusion cross sections by theoretical models can not guarantee the fair information about realistic fusion mechanism.

The quasifission process produces reaction products mainly with anisotropic angular distribution. But in heavy ion collisions at small beam energies or at large energies with large angular momentum the angular distribution of quasifission products can be distributed

isotropically. Therefore, the quasifission products having isotropic angular distribution and symmetric mass distribution may be identified as fusion-fission products. Their total kinetic energy distribution is expected to be higher than the one of fusion-fission products. In this respect, the assumptions, which are used to select fusion-fission events from the detected fragments with symmetric mass distribution, isotropic angular distribution and kinetic energy distribution with the Viola systematic, are not free from the doubt to be completely true.

Theoretical models which challenge for wide and detail description of the dynamics of fusion-fission and quasifission processes are far from completeness. For example, the question: what is main mechanism of complete fusion by nucleon transfer at small neck size (dinuclear system concept) or by increasing the neck region due to the decrease of the internuclear distance is still open. The investigation of the role of angular momentum, mass asymmetry and orientation angles of the symmetry axes of colliding nuclei in the entrance channel in formation of the evaporation residues, mass and angular distribution of the fusion-fission and quasifission products is promising in the nearest decade.

The dominance of the quasifission process in comparison with fusion-fission reaction in reactions with massive nuclei and its strong dependence on the nuclear shape, shell structure and orientation angles of symmetry axis of colliding nuclei determine new experimental and theoretical investigations to find basic properties of the fusion-fission mechanism. The new knowledge about nucleus-nucleus interaction dynamics allows us to study the landscape of islands superheavy elements and exotic nuclei, far from the valley of the beta stability.

The aim of this Symposium is to wide and detail discuss of problems arising in front of experimental and theoretical groups and to find overlap between different approaches and methods which are devoted to study the same physical object-nuclear reaction dynamics.

The Proceedings of the talks presented at Symposium will be available in the form of “online-only publication”.

No registration Fee is planned for participants of the Symposium. Participation is open to all persons interested in Nuclear Physics. If you plane to participate in the Symposium you are requested to complete the on-line pre-registration form at the Symposium Web-site (<http://nucleo.unime.it/symp2010>) .

We will send you the Second Circular until September 6th, 2010, which provides the preliminary program, the hotel information and hotel accommodation form.

Call for papers.

Participants which are interested to present their recent works at the Symposium can submit the abstracts before July 17th, 2010 (using the word or latex template available in the Web-site of the Symposium).

Additional information can be found at the Symposium Web-site (<http://nucleo.unime.it/symp2010>) .

Participants will receive information on the acceptance of their contributions for oral presentation before July 31st, 2010.

Preliminary list of Speakers

G. Adamian, JINR (Russia)
G. Antonenko, JINR (Russia)
Y. Aritomo, JAEA (Japan)
B. B. Back, Argonne National Lab. (USA)
R.K. Choudhury, BARC (India)
L. Corradi, LNL (Italy)
G. Giardina, University of Messina (Italy)
S. Heinz, Gesellschaft Schwerionenforschung mbH (Germany)
E. Kozulin, JINR (Russia)
A.K. Nasirov, JINR (Russia)
K. Nishio, JAEA (Japan)
M. Morjean, GANIL (France)
K. Pomorski, University MCS (Poland)
W.H. Trzaska, University of Jyvaskyla (Finland),
E. Vardaci, University of Napoli (Italy)
H.Q. Zhang, China Inst Atom Energy (Chine)