

Dottorato di Ricerca in Fisica dell'Università degli Studi di Messina
9 Maggio 2012, ore 15.00-17.00, Aula E. Majorana, Dip.to di Fisica,
V.le F. Stagno d'Alcontres 31, S. Agata, Messina

Prof. A.K. Nasirov
Bogoliubov Laboratory of Theoretical Physics of the JINR of Dubna , Russia

First Seminar (15.00 pm)

Competition between quasifission and complete fusion in the $^{34}\text{S}+^{238}\text{U}$ reaction

Abstract : The capture cross section is shared between complete fusion of colliding nuclei and quasifission of the formed dinuclear system.

The competition between these channels is related to the intrinsic fusion barrier B^*_{fus} and quasifission barrier B_{qf} for the dinuclear system. The effects of this interrelation have been studied for general cases and particularly for the above-mentioned mass asymmetric reaction.

Second Seminar (16:00 pm)

**Fusion probability for the $^{108}\text{Mo}+^{144}\text{Ba}$ reaction.
Comparison with the spontaneous fission process of ^{252}Cf**

Abstract : The qualitative difference between spontaneous fission of ^{252}Cf into the ^{108}Mo and ^{144}Ba products , and complete fusion of these nuclei as projectile and target is analysed.

We prove that the main fission channel cannot be the main favorable channel for formation of ^{252}Cf .