

Physics Cases and Instrumentation for the EURISOL-DF, next step towards Eurisol



Contribution ID: 13

Radioactive Ion Beams

Type: **Going to the limits of mass, temperature, spin and isospin with heavy**

Nuclear Fragment production and identification at Fermi energies

The efficient detection and the good identification of the many nuclear species emitted in heavy-ion reactions at Fermi energies are important to disentangle the various reaction mechanisms and to progress in the knowledge of the nuclear equation of state and in the search of in-medium effects on the decay properties.

Due to the rich variety of fragments and their wide emission phase space, it is valuable the use of detectors well performing in terms of isotopic discrimination and angular coverage, possibly in a flexible way. Such features can represent a bonus not only for current or short-term studies but also in view of next RIB facilities, in particular these reaching the typical cyclotron energies.

The european FAZIA collaboration (France, Italy, Poland) has developed in the recent past a new kind of detector module, offering unprecedented detection capability and original solutions as far as the front-end-electronics, the slow-control and the DAQ systems are concerned. 12 FAZIA modules are in construction, each of them being made of 16 three-layer solid-state telescopes, for a total of 192 devices

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