Japan-Italy EFES(-INFN) Workshop on Correlations in Reactions and Continuum

Drawn by N. Pollarolo

"I + J" makes T(orino)
(will lead to Truth)

The Tower and Mountains

Two men of genius born in Torino
J. Lagrange 1736
A. Avogadro 1776

Aim

Understanding the dynamics of strongly interacting nucleons in bound and continuum states esp. near drip lines

Bringing together Italian and Japanese nuclear physicists to discuss various problems and to promote future collaborations

30 talks

Topics discussed

- Reaction dynamics of various systems
  - Few-body scattering — Aoyama
  - Breakup — Bonaccorso, Nakatsukasa, Otsuka, Kato, Yahiro
  - Pair transfer — Matsuo, Hagino, Vigezzi
  - Fusion — Yusa, Iwata, Ichikawa
  - Direct reaction — Shimoura
  - Molecular resonance — Ito
  - Astrophysical interest — T.Suzuki, Roca-Maza, Matsuo
- Strength (Response) function
  - Electroweak, PDR — Horiuchi, Y.Suzuki, Matsuo, Nakatsukasa, Yoshida, Kato, Ebata, T.Suzuki
  - Nuclear-Coulomb — Vitturi
  - S.p. spectro. factor — Barbieri, Bonaccorso, Colo
  - Spreading width — Molinali
  - Excitation function — De Donne

- Shell structure near drip line
  - G-matrix and deformation — Lenzi
  - Shell evolution and three-body forces — Otsuka
  - No core shell model for C isotopes — Fujii
  - V-{low k} approach for C, Sn isotopes — Gargano
- Pair correlations — Matsuo, Hagino, Sagawa, Ebata
- Particle-vibration coupling — Vigezzi, Colo, Mizuyama

Methods

Green's function, Complex scaling method(CSM), Continuum-discretized coupled channels(CDCC), Complex absorbing potential(CAP), Large-scale SM, MO and LCAO, RPA, Time-dependent approach , DFT, Random matrix, LDM, etc.

Further research for exotic nuclei

Properties of three-body forces
Microscopic derivation of optical potentials
Coupling of weakly-bound and continuum states
Nuclear properties under extreme conditions