Corso di Dottorato di Ricerca in Fisica
a.a. 2016/2017

Selected Topics in **Nucleon transfer reactions close to the Coulomb barrier**

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Seminar 1 ***October 13th 15:30 p, meeting room 207 Paolotti building***

A. **Basic concepts in reactions**, in particular, in transfer reactions involving light-heavy and heavy nuclei (the effective potential, the behaviour of the deflection function, the deflection function and light-heavy ions and nuclear rainbow, differential cross sections, the origin of the grazing peak and optimum Q-value, the importance of absolute cross sections)

B. **Gleams from the theory of transfer reactions**
(DWBA, Reaction codes, Semi-classical approach, GRAZING code)

Seminar 2 ***October 14th 10:30 am, meeting room 207 Paolotti building***

A. **Experimental techniques** (spectrometers)
General concepts on spectrometers, Q3D spectrometers, the heavy ion spectrometer ENMA, ToF spectrometers (PISOLO), the large solid angle tracking spectrometers

B. **Reactions with heavy ions** (more recent results)
Quasi-elastic: elastic and inelastic, single particle degrees of freedom, nucleon-nucleon correlations, nucleon-nucleon correlations probed in sub-barrier transfer reactions, towards deep-inelastic collisions