GRUPPO TEORICO
AVVISO DI SEMINARIO

Mercoledì 13 Marzo 2019
ore 15:00

Dipartimento di Fisica
Largo B. Pontecorvo, 3
Aula 248 - primo piano - Ed. C

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Terrà un seminario dal titolo:
“Ab-initio Folding Potentials for Proton-Nucleus Scattering based on NCSM One-Body Densities”

Abstract: The calculation and derivation of microscopic optical potentials for calculating scattering observables for elastic scattering from spin-zero nuclei has a long tradition. So-called microscopic ‘full-folding’ models based on a nuclear density matrix and a fully-off-shell two-nucleon t-matrix have been developed mainly for closed shell nuclei heavier than Oxygen-16 in the 1990s. With the advent of ab initio structure calculations in the No-Core-Shell Model (NCSM) for light nuclei, nonlocal as well as translationally invariant one-body densities can be constructed and employed in calculations of effective interactions in proton-nucleus scattering.

This talk will explain multiple scattering approach to proton-nucleus scattering and show how the first order term can be obtained using a nucleon-nucleon interaction consistently. Results for proton and neutron scattering from Helium-6 to Oxygen-16 in the energy regime between 100 and 200 MeV laboratory projectile energy will be shown and discussed.