

FINUDA results at DAFNE

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FINUDA is an experimental set up dedicated to the study of the interaction of stopped negative Kaons on target nuclei. It is a magnetic spectrometer whose detectors are put inside a uniform magnetic field of 1 T produced by a superconducting solenoid whose inner dimensions are: 2.4 m diameter and 2.4 m length. It includes an inner vertex-target region and several more external layers of detectors (MWDC and Straw tubes) to track charged particles. The most external detector is a barrel of 10 cm thick scintillator slabs that allows, together with the innermost and thin scintillator barrel, trigger selection and time information, including detection of neutrons.

FINUDA can study simultaneously up to eight different nuclei, disposed on thin targets thanks to the low momentum of the charged kaons produced at DAFNE. The spectrometer has high acceptance (about 2 μg) and rather good resolution (about 0.6%).

FINUDA is able to study simultaneously hypernuclei production (spectroscopy) and decay, in both the mesonic and non mesonic branch.

Thanks to its ability to detect final states with several particles, including not only pions, but also p, d and t, it could explore the very debated topic of K^- -multinucleon absorption, measuring missing masses and invariant masses of the produced final states.

The results obtained in the two periods of data taking in 2003-04 and 2006-07 will be presented and discussed.