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Recent results on K^- multinucleon absorption by FINUDA

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The knowledge on K^- absorption by light nuclei is still rather incomplete because of the lack of experimental data, but has recently gained a fresh boost. New precision experiments have been performed, mainly with the aim of finding signatures of multibaryon strange aggregates (dubbed "bound kaonic nuclear clusters"), which could be formed following the absorption of the kaon. According to some theoretical approaches [1] these aggregates are expected to be narrow enough to be observable through their non-mesonic decay.

The real existence of bound nuclear kaonic clusters is still a controversial matter, being investigated applying several theoretical approaches [2]. A few experimental indications for their presence have been recently collected, but alternative explanations in terms of simpler processes giving similar signatures have been suggested as well [3]. Only a thorough experimental description of the absorption process, by a complete study of the final state features, may help ruling out misinterpretations.

Up to now, one of the most precise experiments dedicated to the study of the K^- absorption dynamics is FINUDA, which operated at DAΦNE, LNF. The study of K^- absorption reactions on one and few nucleons has been one of its main research topics [4]. An overview of the results achieved by FINUDA in the study of multinucleon kaon absorption, investigated through final states composed by hyperons and nucleons or light nuclei, will be presented.

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