Contribution ID: **43**   Type: **Oral Presentation**

The two- and three-nucleon correlation functions

The interest in the correlation function is based in the use of the femtoscopy technique in experiments at the Large Hadron Collider (LHC) to perform new high-precision studies of the low-energy interactions between hadrons. This experimental method exploits the production and emission of hadrons at relative distances of the order of a femtometer in pp and p-nucleus collisions, to study their final state interaction. The interaction between hadrons appears as a correlation signal in the momentum distributions of the detected particles which can be measured in the form of a correlation function. This function depends on the emission process, which is the source of hadrons, as well as on the final state interaction of the emitted particles. By measuring correlated particle pairs or triplets at low relative energies and comparing the results of the measurements to theoretical predictions, it is possible to extract information on the two-body hadron-hadron interaction and, eventually, on the three-body interaction. In this contribution I will present the latest results in the theoretical computation of the $p - p$, $p - p - p$, $p - \Lambda$ and $p - p - \Lambda$ correlation functions. In the three-body case the full dynamics has been solved using the Hyprspherical Adiabatic method. Different models of two-body and three-body interaction has been used to analyze the information captured in the correlation functions.

Author: KIEVSKY, alejandro (INFN)

Presenter: KIEVSKY, alejandro (INFN)

Session Classification: Parallel session

Track Classification: Few-Body Systems