

Plenary Talk PV V Wed 9:00 Kurt-Alder HS Chemie
Femtoscopy-for-interactions : a new tool to study low energy QCD — •LAURA FABIETTI for the ALICE Germany-Collaboration
— Technische Universität München

In recent years a new technique to study the residual strong interaction among hadrons has been developed at the LHC. The ALICE collaboration applied the femtoscopy-for-interactions method to data collected in pp collisions at 13 and 13.6 TeV to study the strong interaction of any hadron pairs containing up, down, strange and charm quarks. The technique provided precision data for systems already studied with scattering experiments, but also allowed to measure for

the first time two body interactions which are otherwise not directly accessible. Systems such as Proto-Omega and D meson-pion or D meson-kaon have been investigated with the femtoscopy-for-interactions tool at the LHC. This allowed to test novel lattice calculations, constraint existing chiral models and look for the evidence of bound states. Such studies have recently also be extended to systems containing three hadrons with the aim of accessing genuine three particle interaction in a direct way or investigating the production mechanism of (anti)nuclei in hadron collisions.

The femtoscopy-for-interactions technique opened a plethora of applications in nuclear and hadron physics and this talk will provide an overview of the recent results and future perspectives.