



Contribution ID: 490

Type: **Contributed talk**

## Measuring baryon-(anti-)baryon interaction cross-sections with femtoscopy in heavy-ion collisions

*Tuesday, 29 September 2015 12:10 (20 minutes)*

Interaction cross-sections for baryon pairs are of fundamental interest and they are actively investigated theoretically. They are known well for pairs of common (anti-)baryons, however there is a lack of precise data for heavier baryons, including the ones carrying strangeness. The two-particle correlation formalism (femtoscopy) is sensitive to the interaction kernel for a pair of particles, which is related to the pair interaction cross-section [1]. We show how this formalism can be used to extract the cross-sections from the femtoscopic baryon-(anti-)baryon correlation functions [2]. The analysis is complicated by the presence of the so-called “residual correlations” arising from weak decay products in the measured sample. We show how this effect can be exploited to gain further insight into the cross-sections of even heavier baryons. We discuss the limitations of the measurement technique and estimate the discovery potential of currently available and soon-to-be-collected heavy-ion collision datasets at RHIC and at the LHC.

[1] A. Kisiel, H. Zbroszczyk, M. Szymanski; “Extracting baryon-antibaryon strong interaction potentials from  $p\Lambda^-$  femtoscopic correlation functions”; *Phys.Rev. C* 89 (2014) 5, 054916

[2] R. Lednicky, V.L. Lyuboshits; “Final State Interaction Effect on Pairing Correlations Between Particles with Small Relative Momenta”; *Sov.J.Nucl.Phys.* 35 (1982) 770, *Yad.Fiz.* 35 (1981) 1316-1330

### On behalf of collaboration:

NONE

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**Session Classification:** Correlations and Fluctuations III

**Track Classification:** Correlations and Fluctuations