

Welcome to NICA days 2017 in Warsaw



Contribution ID: 44

Type: **Talk**

Vorticity and polarization in baryon-rich matter at NICA

Monday 6 November 2017 10:00 (25 minutes)

We study the structure of vorticity and hydrodynamic helicity fields in peripheral heavy ion collisions using the kinetic Quark-Gluon String and Hadron-String Dynamics models. We observe the formation of specific toroidal structures of vorticity field (vortex sheets). Their existence is mirrored in the polarization of hyperons of the percent order. Its rapid decrease with energy was predicted and recently confirmed by STAR collaboration. The energy dependence is sensitive to the temperature dependent term derived and discussed in various theoretical approaches. The antihyperon polarization is of the same sign and larger magnitude. The crucial role of strange vector mesons is also discussed.

Primary authors: Dr BAZNAT, Mircea (Institute of Applied Physics, Academy of Sciences of Moldova); Prof. GUDIMA, Konstantin (Institute of Applied Physics, Academy of Sciences of Moldova); Prof. SORIN, Alexander (Joint Institute for Nuclear Research); Prof. TERYAEV, Oleg (Joint Institute for Nuclear research)

Presenter: Prof. SORIN, Alexander (Joint Institute for Nuclear Research)

Session Classification: Session 1; 6-nov 2017;

Track Classification: NICA acceleration and experimental complex