

Seminarium Szkoły Doktorskiej NCBJ

**Thursday, 25 January, 9:15
room 207, Pasteura 7**

<https://www.gotomeet.me/NCBJmeetings/phd-seminar>

<https://events.ncbj.gov.pl/event/300/>

Speaker:

Nora Salone (Szkoła Doktorska NCBJ)

Title:

Spin-entanglement in hyperon decays

Abstract:

Recent results published by the BESIII collaboration revealed a substantial update in the value of the Lambda baryon decay parameter.

This development is taken as the starting point for a feasibility study of CP violation tests in strange baryon decays at next-generation J/psi factories. The proposed formalism allows for directly comparing particle and antiparticle properties, analyzing the weight of spin-correlation and polarization terms on such tests.

Furthermore, the spin-entanglement feature of the produced Yanti-Y pair can also be exploited to provide a description for hyperon semileptonic decays. The spin-density matrix of this process is presented, along with an outlook of the possible future applications.