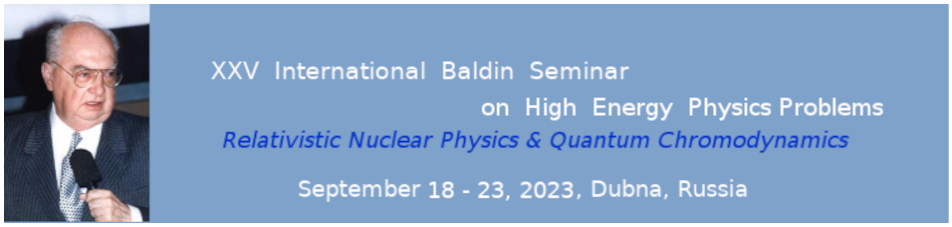

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Probing a core of the interaction potential of two lambda-hyperons with femtoscopic correlations at LEP

Thursday, 21 September 2023 14:50 (20 minutes)

The analysis of ALEPH data on femtoscopic correlations of two lambda-hyperons in Z-boson decays yields a very small source radius of 0.11+/-0.03 fm if taking into account only the repulsion due to the Fermi-Dirac quantum statistics. Such a small source radius is counter-intuitive in the string picture of particle production due to a moderate string tension of ~1 GeV/fm. It is shown that the ALEPH data can be desribed with an acceptable source radius of ~0.4 fm if taking into account the repulsive final state interaction between the two lambda-hyperons at distances smaller than a femtometer. Such an information on the two lambda-hyperon potential core is practically inaccessible by other means.

Primary author: LEDNICKY, Richard (JINR Dubna)

Presenter: LEDNICKY, Richard (JINR Dubna)

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