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Hyperon Polarization in Heavy ion Collisions

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The STAR collaboration has measured the Λ and anti- Λ polarizations in 200 GeV Au-Au collisions [1]. These results can be understood in terms of a model [2], [3], that we proposed recently, based on the hydrodynamical model, and taking into account the effect of the final-state interactions (that occur in the hadronic phase) between the hyperons and other produced particles. These final interactions are described in terms of chiral effective lagrangians, that consider many hadronic processes. This model describes quite well the antihyperon polarization data obtained in proton-nucleus collisions, and now we extended it to study nucleus-nucleus collisions, with a very good accord. Theoretical results obtained with other models will also be discussed. The perspectives of hyperon and antihyperon polarization at LHC is another subject of interest.

References:

- [1] STAR Collaboration: B. I. Abelev et al., Phys. Rev. C, 76, (2007) 024915.
- [2] C. C. Barros Jr. and Y. Hama, Phys. Lett. B., 699, 74 (2011).
- [3] C. C. Barros Jr., to be submitter soon.

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