Contribution ID: **38** Type: **not specified**

$\Lambda/\bar{\Lambda}$ Polarization and Splitting Induced by Rotation and Magnetic Field

The global polarization of $\Lambda/\bar{\Lambda}$ and the splitting between them induced by rotation and magnetic field has been investigated in a dynamical quark model by taking into account the axial vector interaction and the anomalous magnetic moment of quarks. It is found that the rotation leads to the spin polarization of quarks and anti-quarks with the same sign, while the magnetic field leads to opposite sign, which corresponds to the $\bar{\Lambda} - \Lambda$ polarization splitting. The combination of the two effects leads to perfect agreement with experiment data. Quantitatively, the axial vector interaction contributes 30% of the global polarization and the anomalous magnetic moment of quarks contributes 40% to the splitting of $\bar{\Lambda} - \Lambda$ polarization. However, at $\sqrt{s_{NN}} \leq$ 7.7GeV, it still remains a challenge to reach enough magnitude of the magnetic field at freeze-out.

Primary authors: 许, 坤; Mr LIN, Fan; HUANG, Anping; HUANG, Mei (University of Chinese Academy of Sciences)

Presenter: 许, 坤