

# **Baryon production asymmetry and Quark Gluon String Model.**

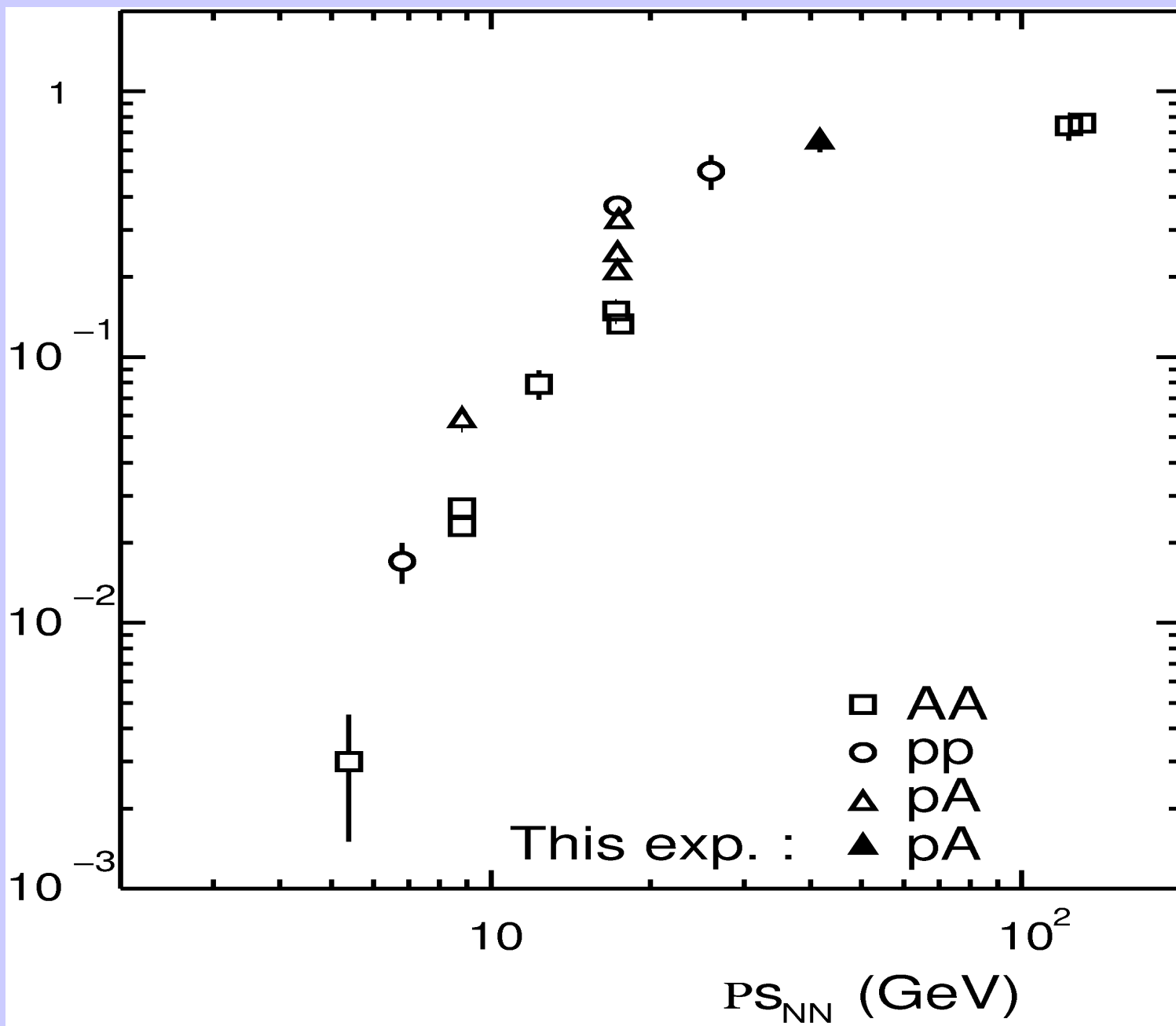
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# Outline:

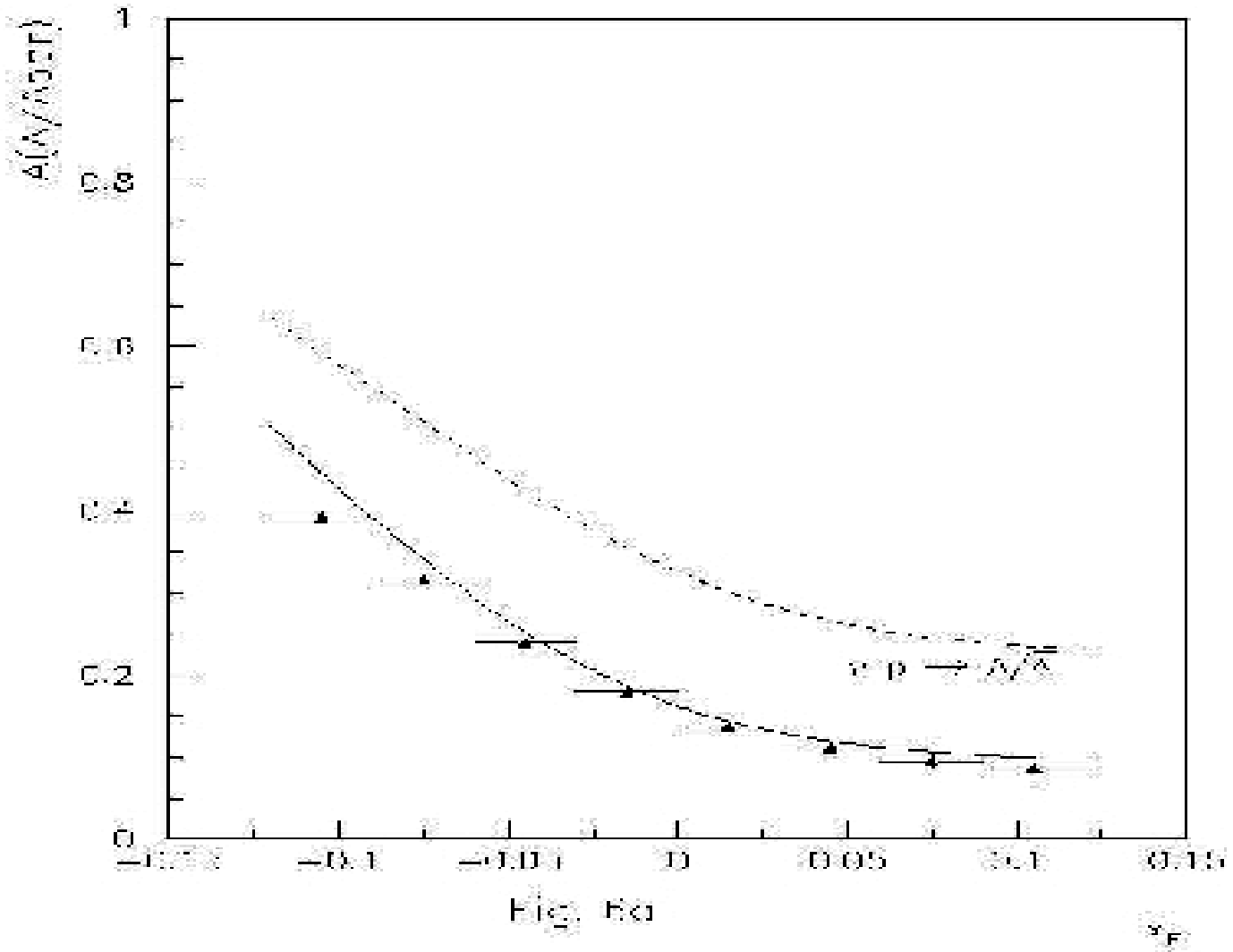
- ❏ Data collection:
  - $\Lambda^0/\text{anti}\Lambda^0$  asymmetry (pp, pA,  $\pi$ A, AA)
  - $\Lambda_c/\text{anti}\Lambda_c$  data ( pp)
  -
- ❏ QGSM approach:
  - diquark fragmentation in pp collisions
  - string junction transfer in  $\pi$ p interactions
- ❏ QGSM results:
  - $\Lambda^0/\text{anti}\Lambda^0$  spectra in  $\pi$ A
  - $\Lambda_c/\text{anti}\Lambda_c$  asymmetry and spectra
- ❏ Summary

# $\Lambda^0/\bar{\Lambda}^0$ ratio

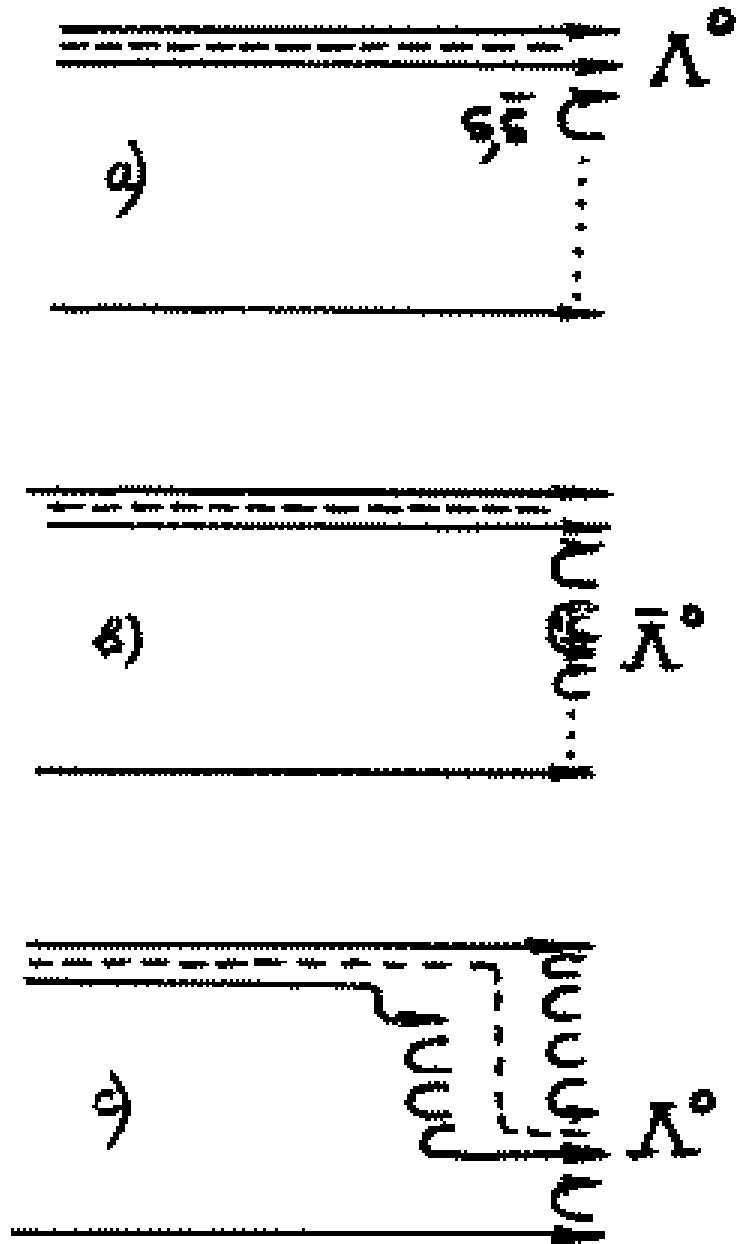


# $\Lambda^0/\bar{\Lambda}^0$ asymmetry

E769 experiment,  $p_L=500\text{GeV}/c$



# QGSM approach



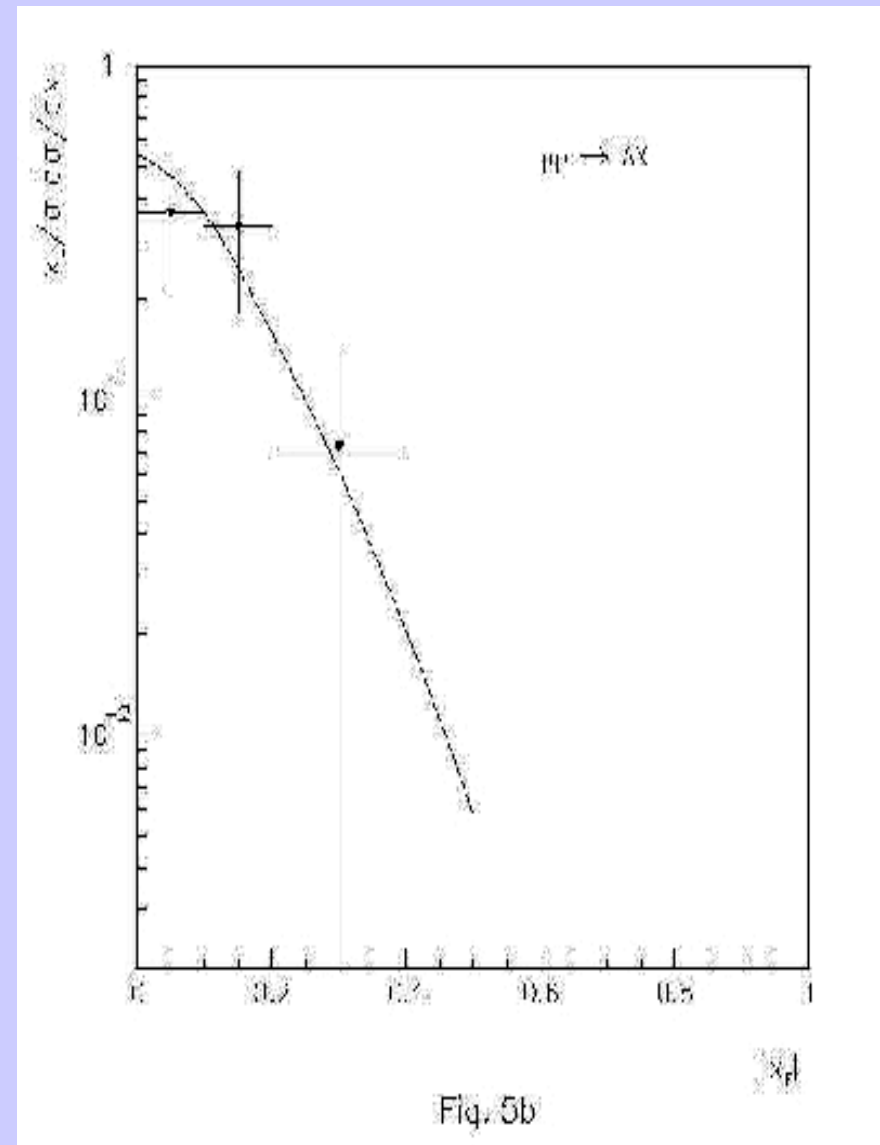
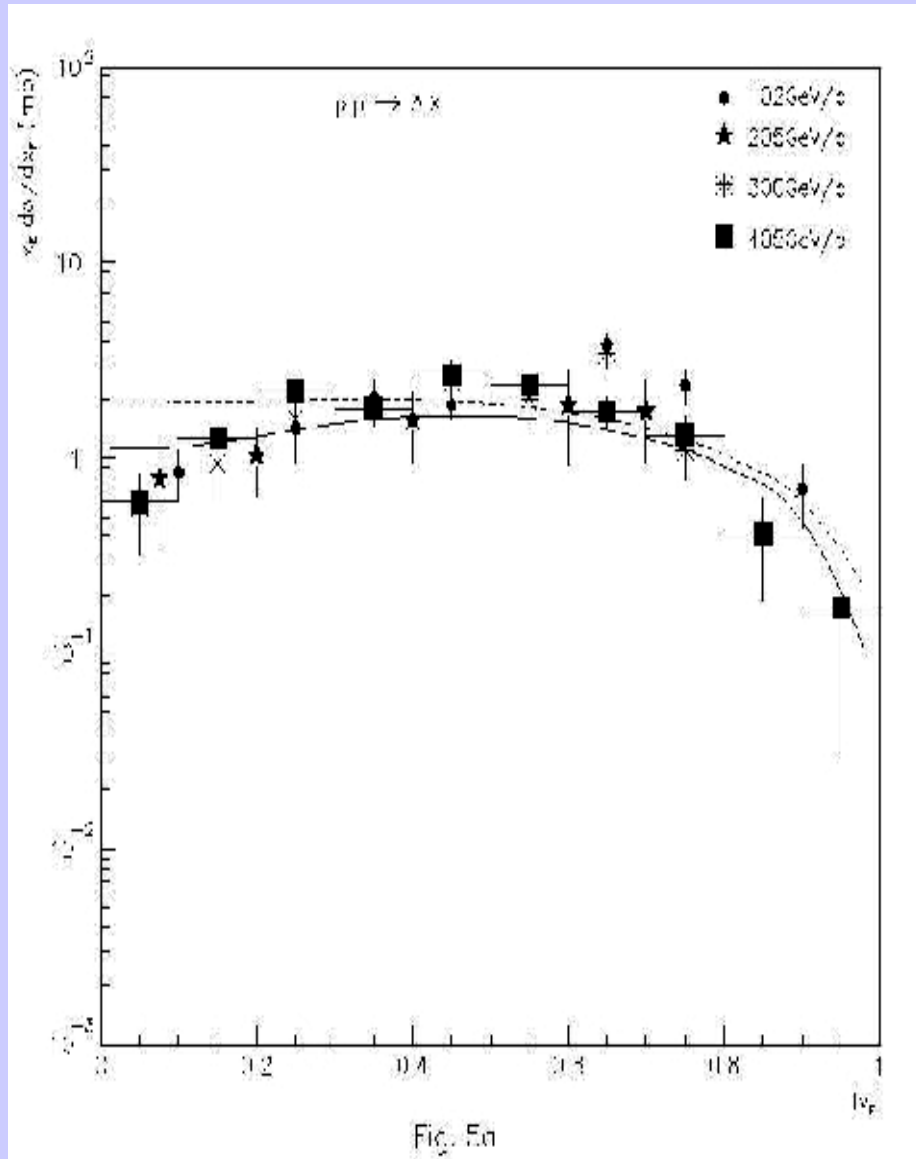
Types of fragmentation:

a) leading baryon production;

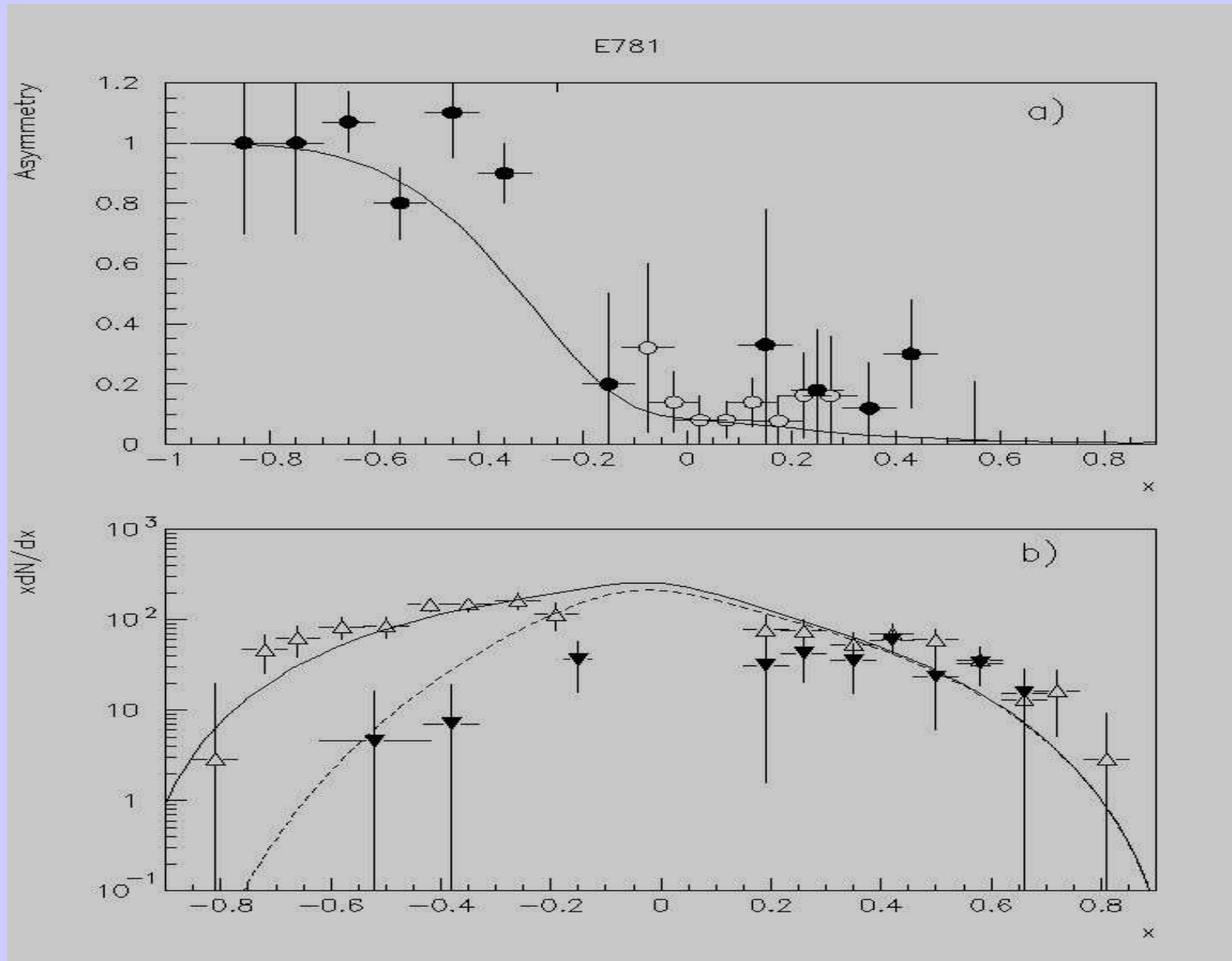
b) nonleading baryon/antibaryon production;

c) string junction transfer:  $\alpha_{SJ}(0) = 0,5$  or  $0,9$ .

# $\Lambda^0$ and $\bar{\Lambda}^0$ production spectra

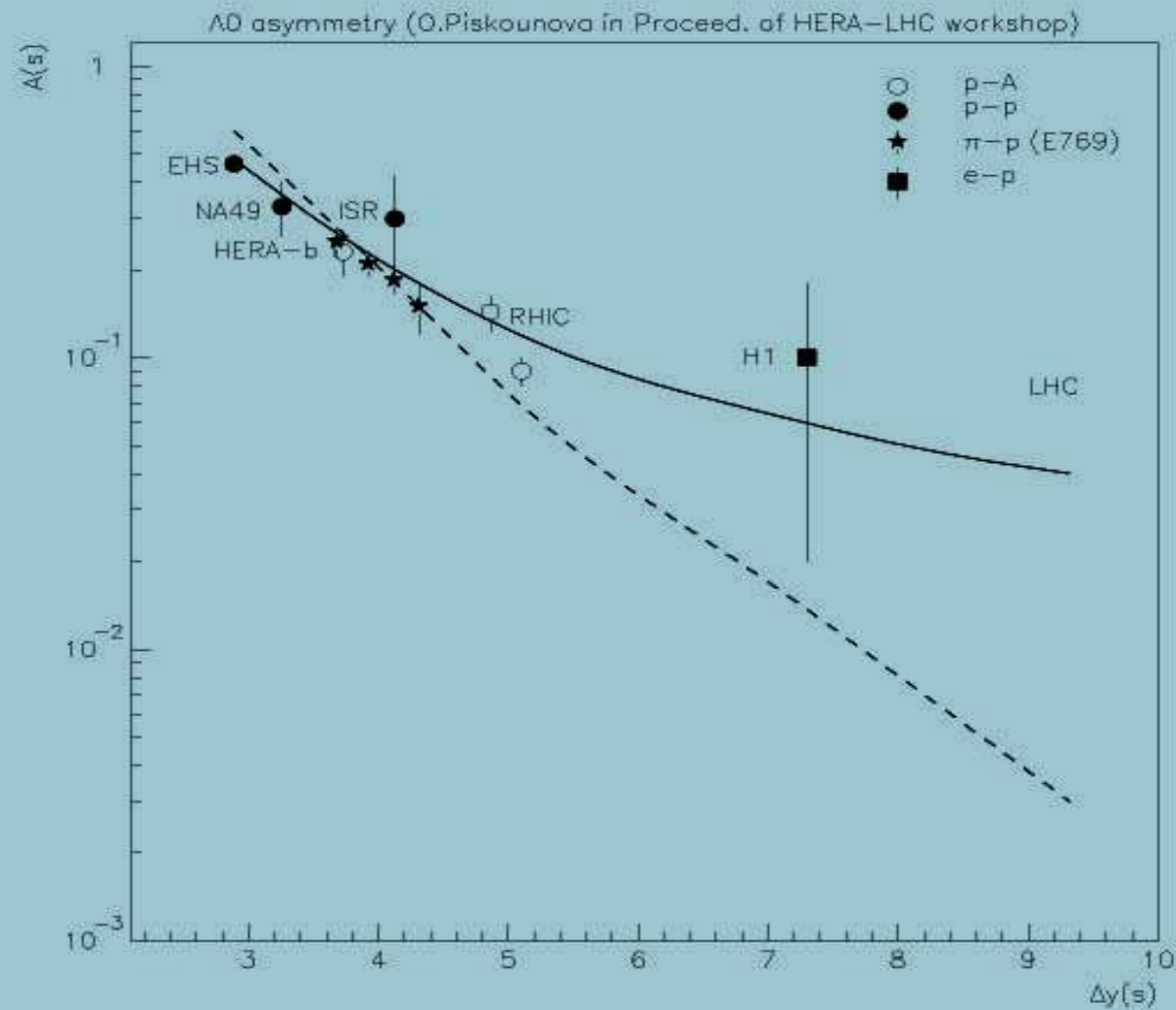


# $\Lambda_c^-$ and $\bar{\Lambda}_c^+$ production spectra



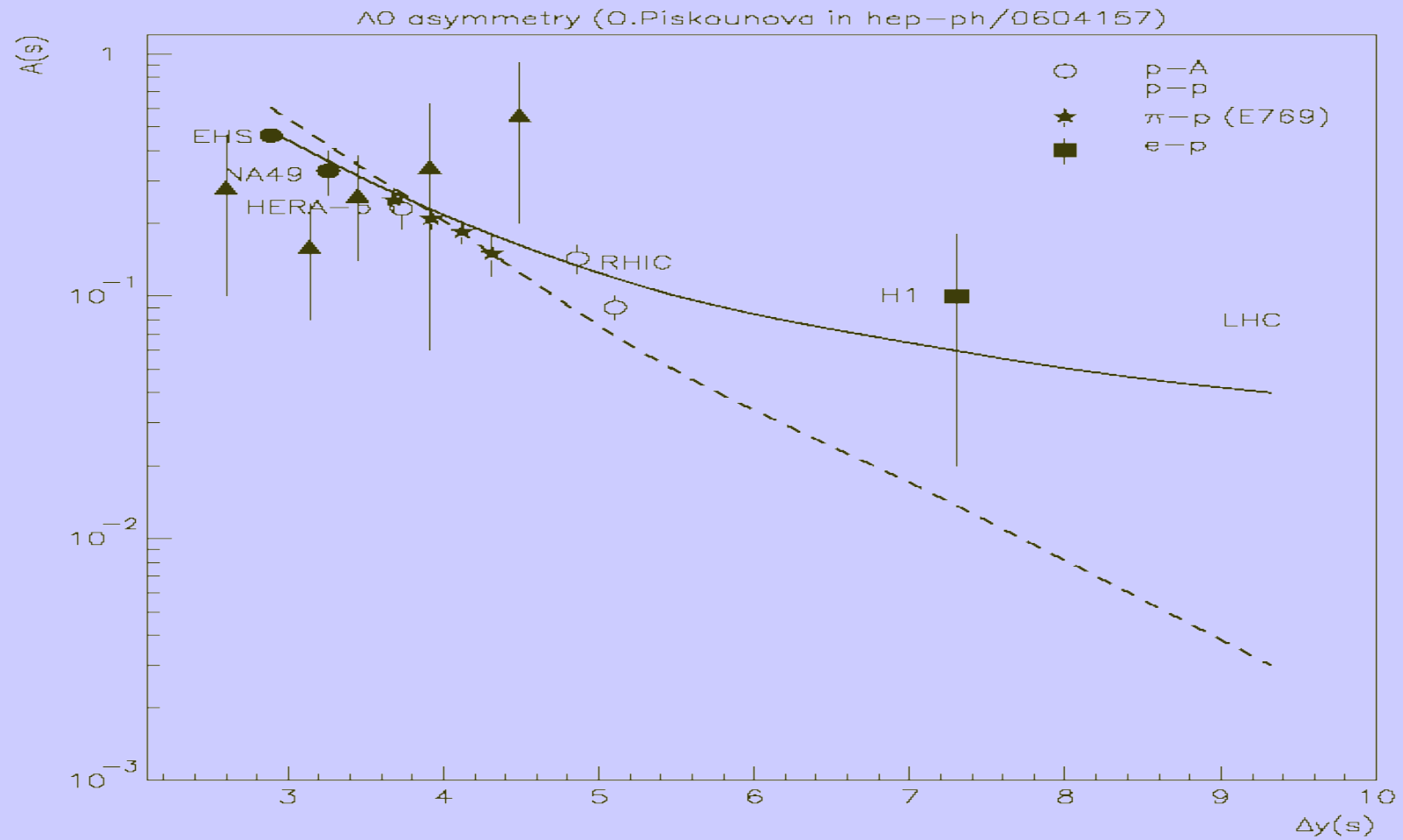
Spectra were described with  $\alpha_{S_J}(0)=0,5$

# $\Lambda^0/\bar{\Lambda}^0$ asymmetry





# $\Lambda_c^- / \bar{\Lambda}_c^+$ asymmetry



# Summary

- **Choice between two values of  $\alpha_{S_J}(0)$  should be done at HERA and Tevatron**
- **Valuable asymmetry between spectra of baryons and antibaryons can be seen at LHC energy**
- **Bigger asymmetries for charmed and beauty baryons are expected in QGSM**



# Supersymmetry hadron interaction and Quark Gluon String Model.

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