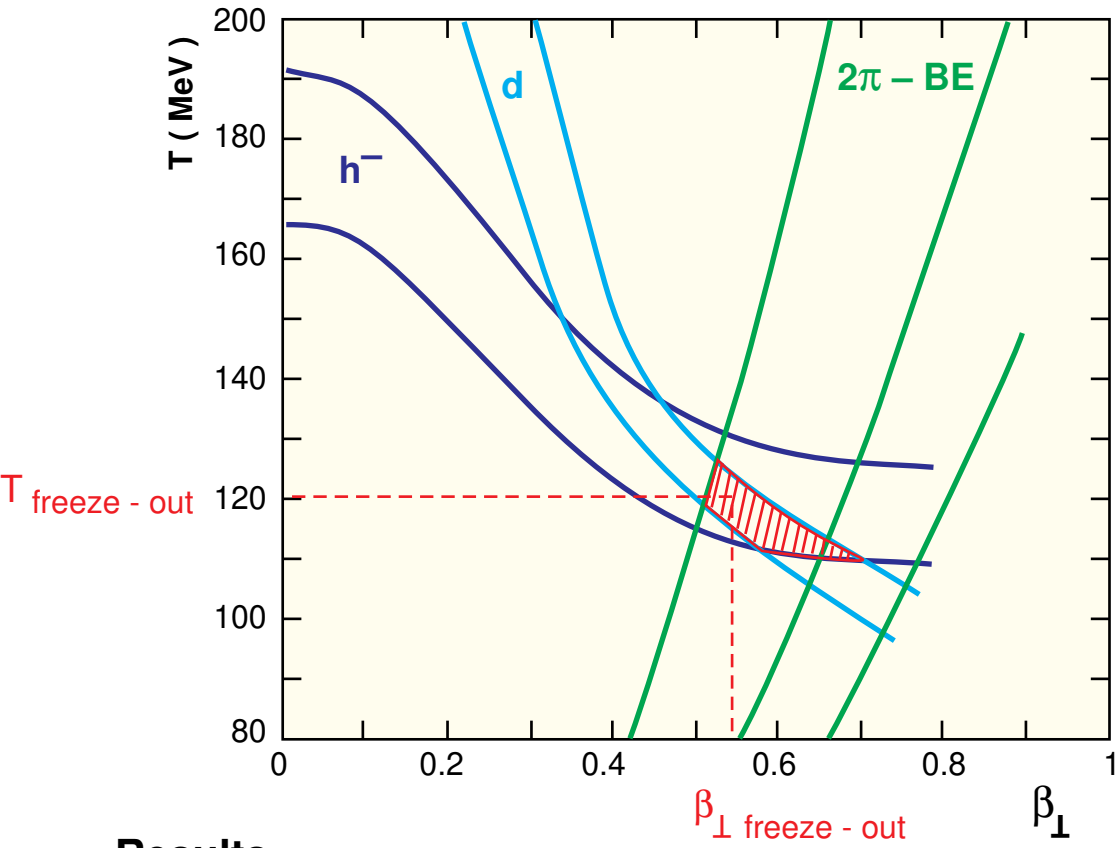
NA49 central Pb+Pb at 158 GeV/Nucleon

Hadronic Expansion Dynamics

- Bose Einstein correlation of **negative pions** (2π - BE)
- and transverse mass spectra of **negative hadrons** (h^-) and **deuterons** (d)

→ **determine the conditions at hadronic decoupling**



Results

From initial hadronization stage at T = 190 MeV to final hadronic decoupling (freeze - out)

- **Source expanding radially and longitudinally**
- **Duration of expansion $< \tau > = 8$ fm / c**
- **Local thermal equilibrium**

  $T_{\text{freeze - out}} = 120 \pm 10$ MeV

  $\beta_{\perp\ \text{freeze - out}} = 0.55 \pm 0.12$

  $\beta_{L\ \text{freeze - out}} = 0.90$