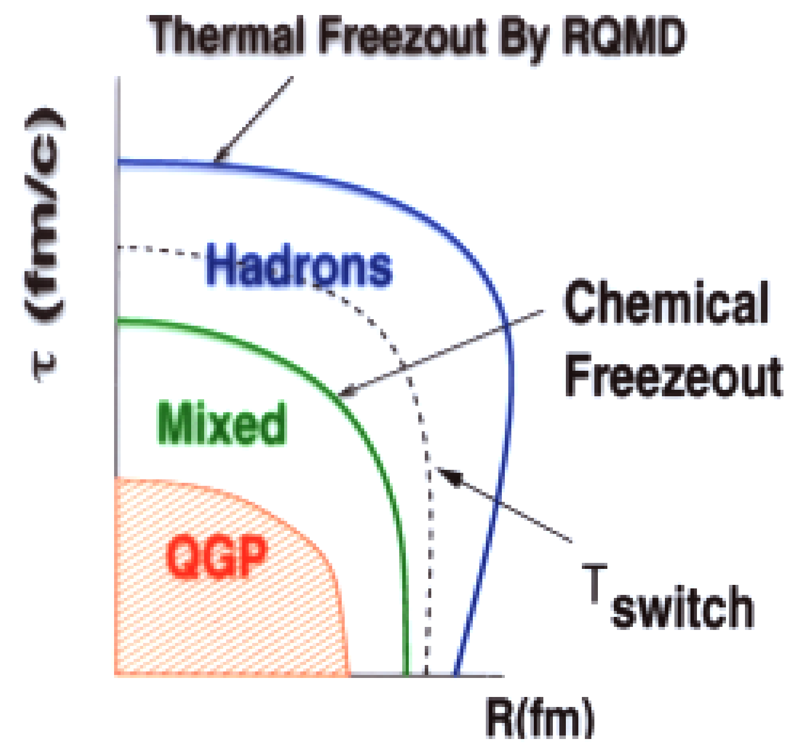
Hydro+Cascade: The Standard Picture



Use hydro for QGP and mixed Phase :

Does it reproduce Flow at the SPS ?

- Radial ?

- Elliptic ?

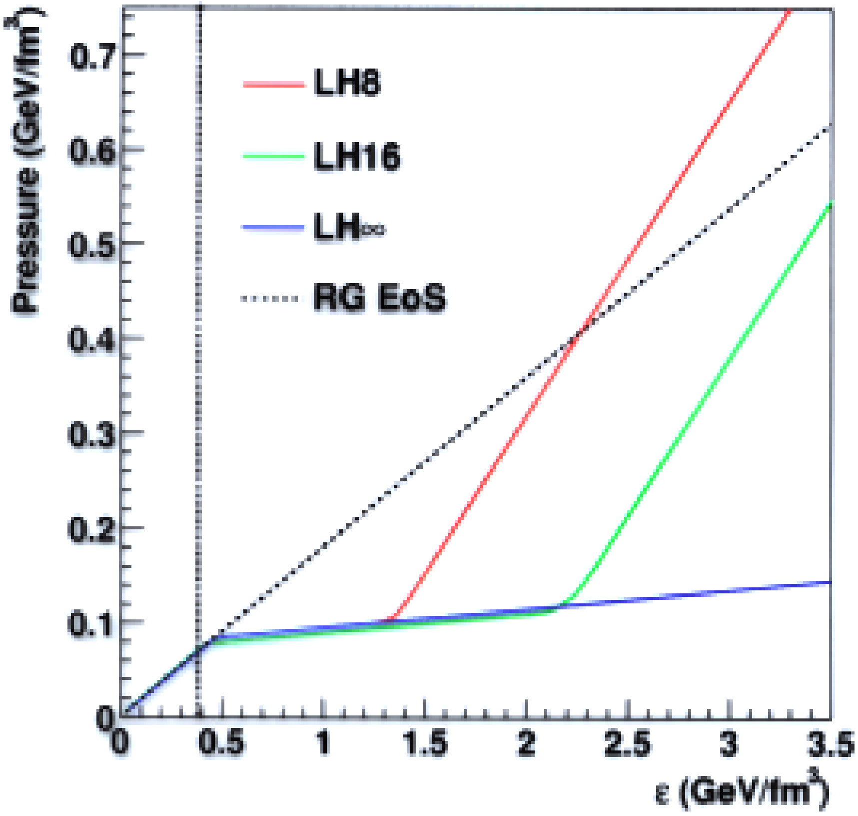
Do Results depend on Tswitch ?

- Implement Chemical Freezout in Hydro

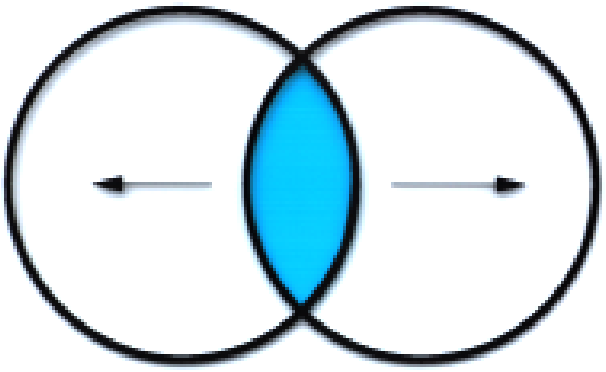
Predictions for RHIC

- How do they depend on EOS ?

Hydro takes as input an Equation Of State



2 + 1 Bjorken Hydro



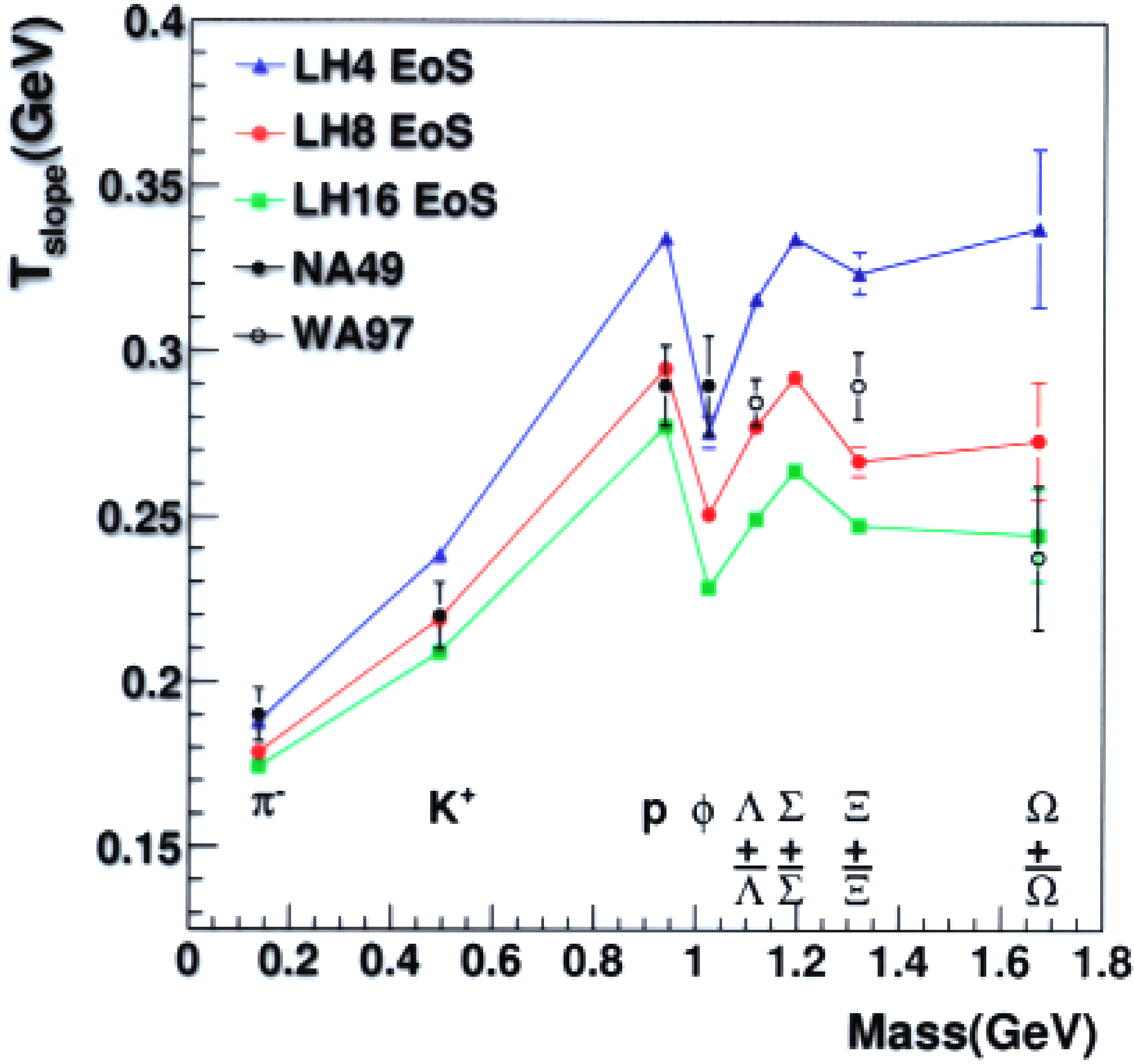
Parameters in the code

$\frac{dN_{ch}}{dy}$ ⟶ **Entropy Density**

$\frac{dN_B}{dy}$ ⟶ **Baryon Density**

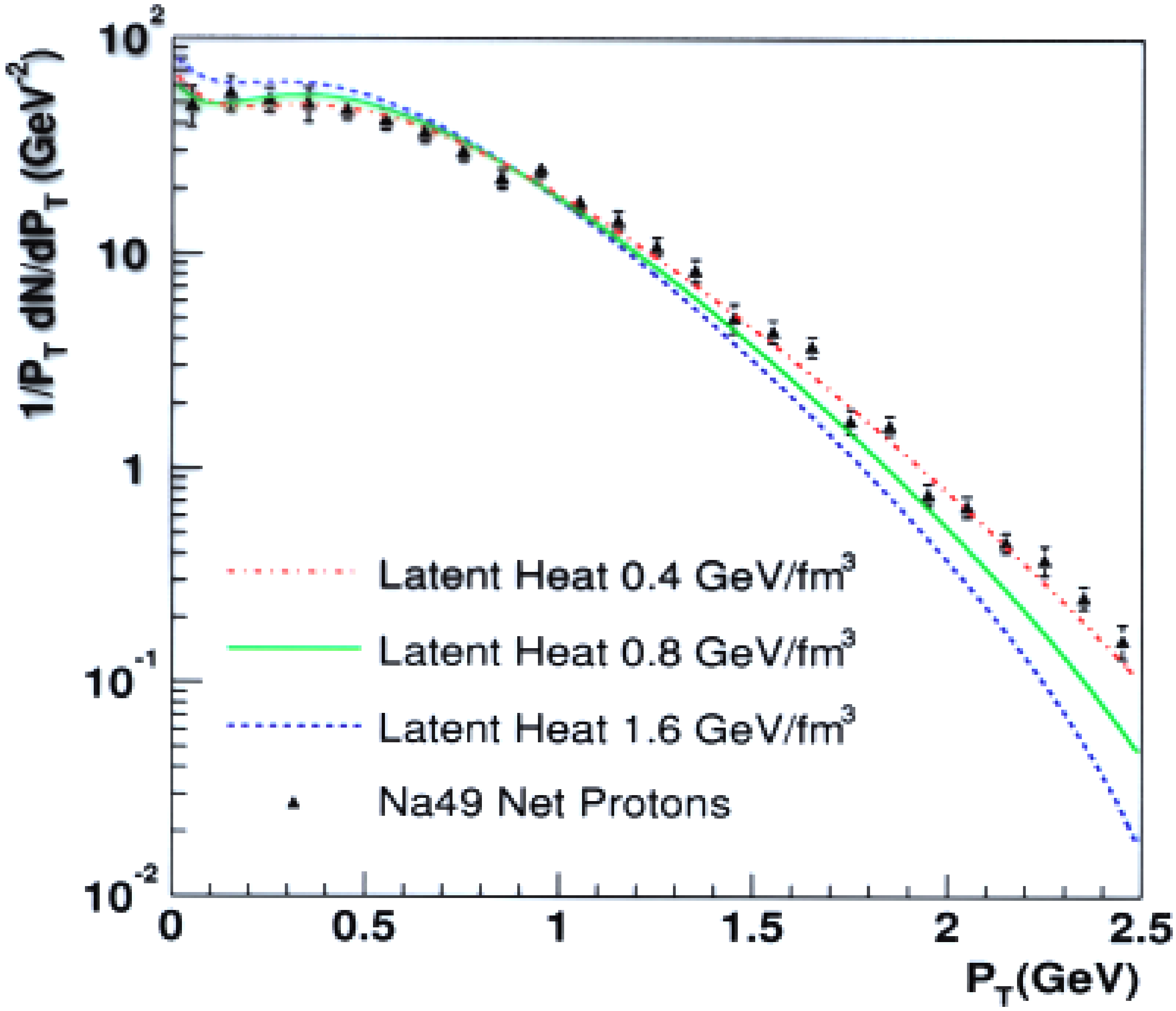
V_t is 0 at τ = 1 fm/c and builds up over time.

Radial Flow : Does H2H Work at the SPS ?



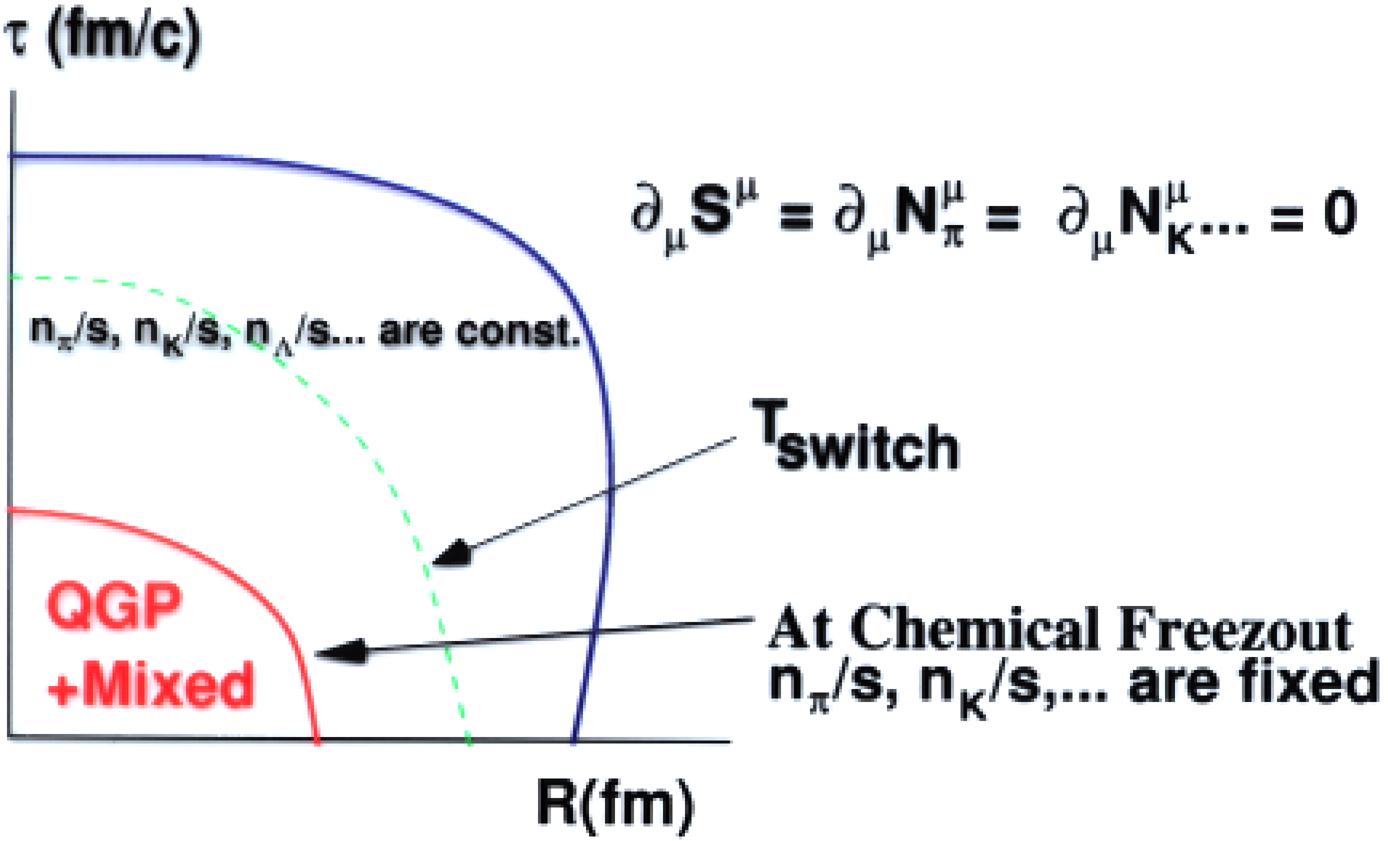
Reproduces Flow systematics

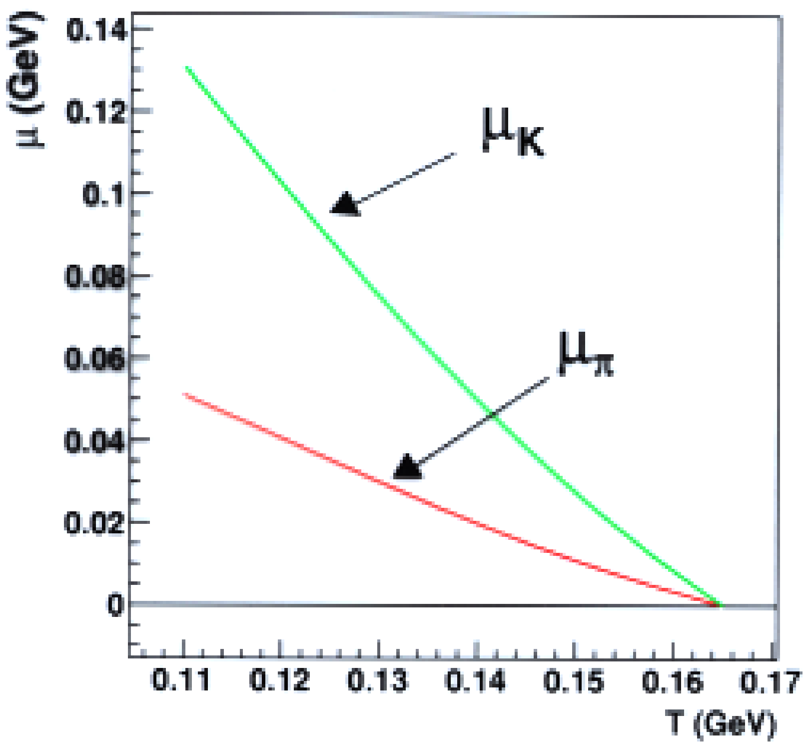
Radial Flow : Does H2H Work at the SPS ?



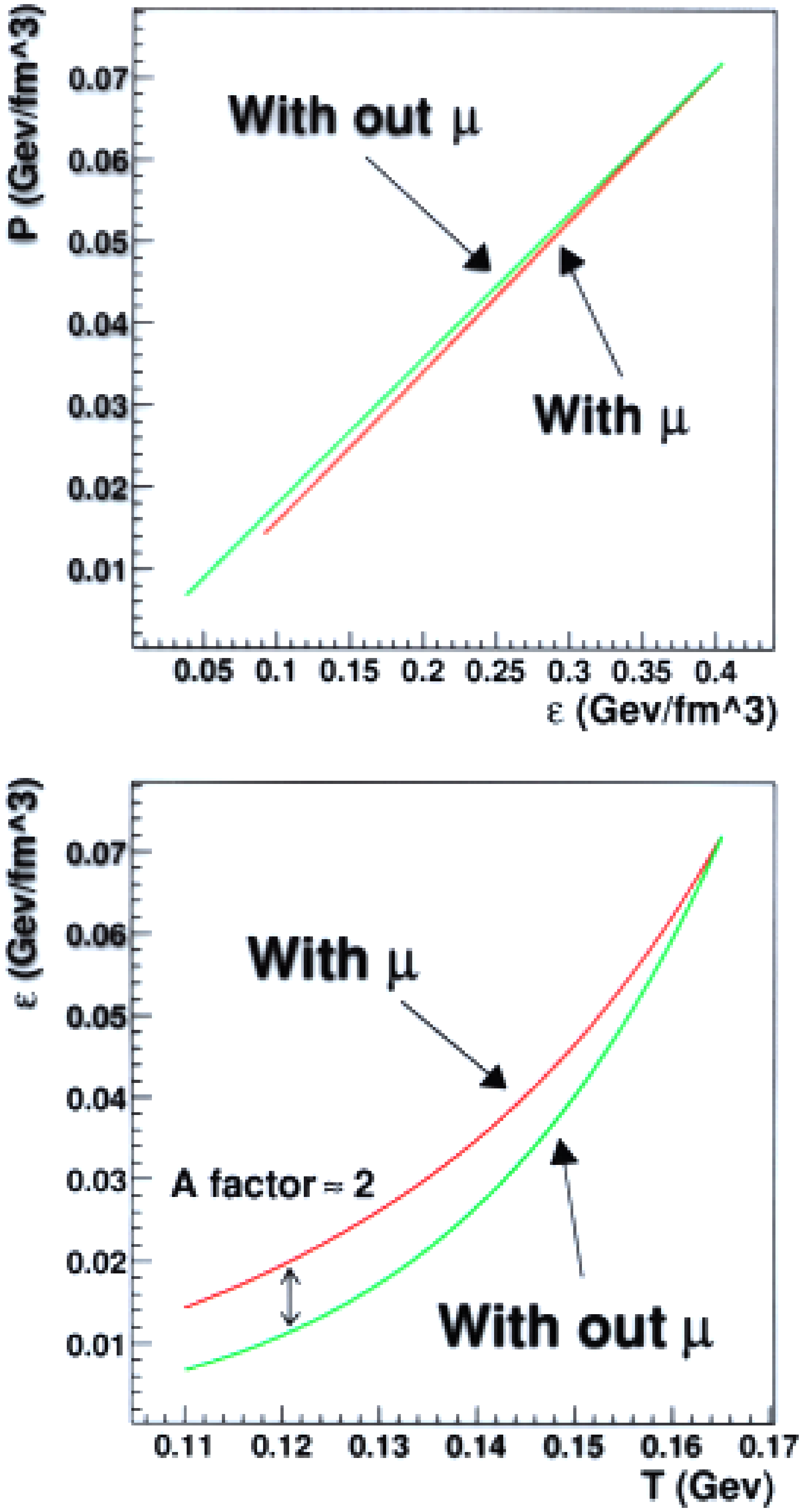
Favors LH8 or Harder

Implementing Chemical Freezout in Hydro

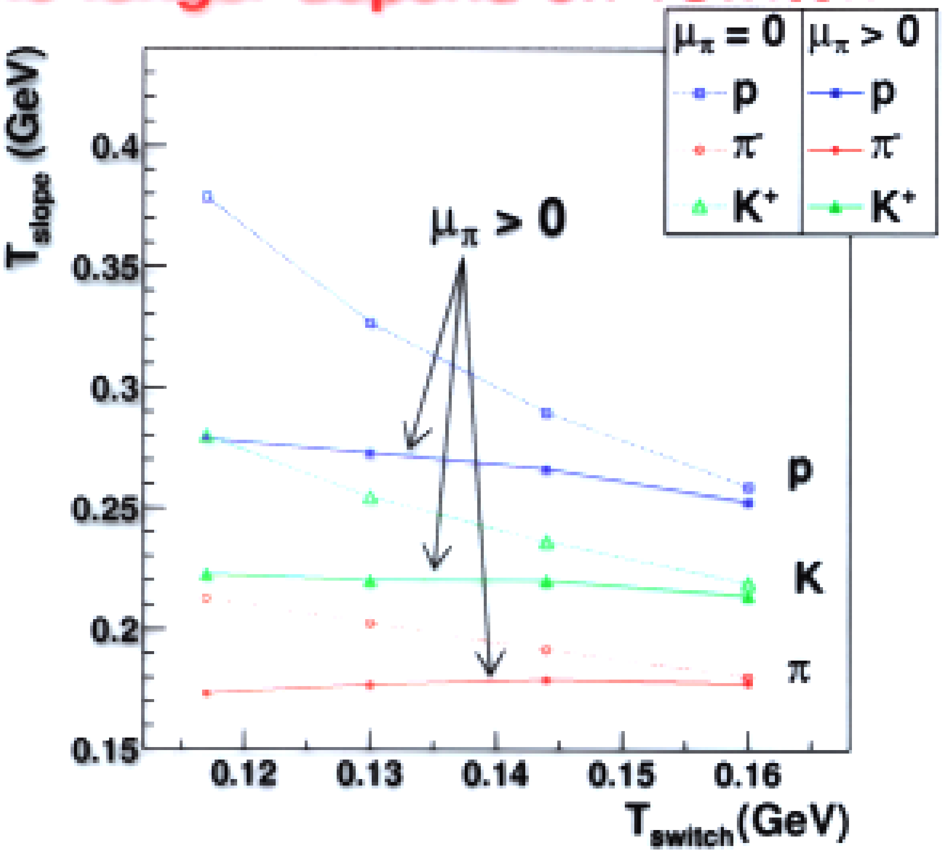


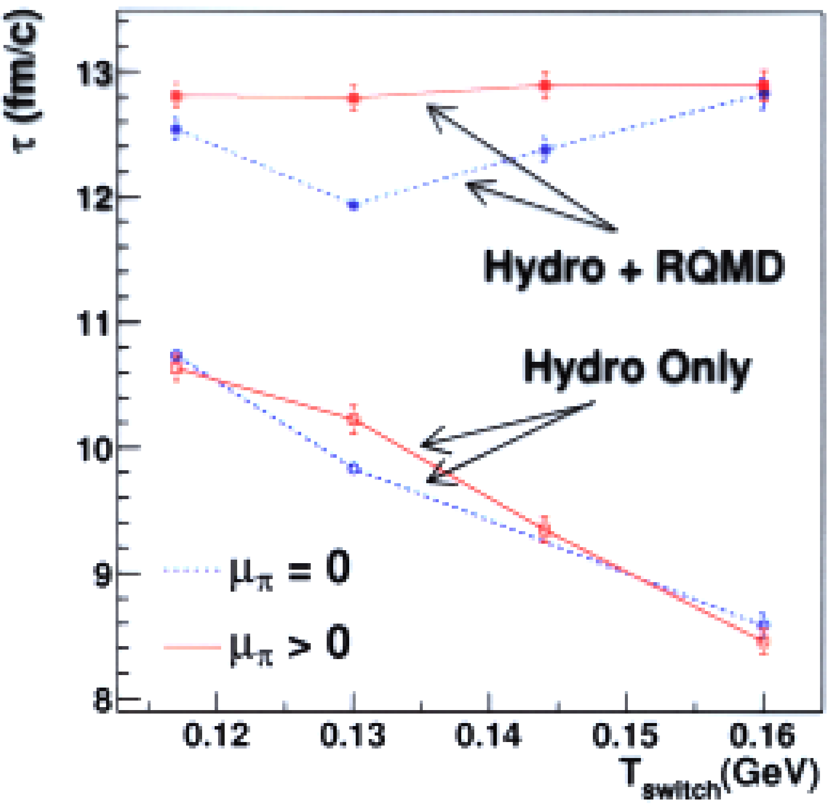


How does chemical Freezout affect the EOS ?

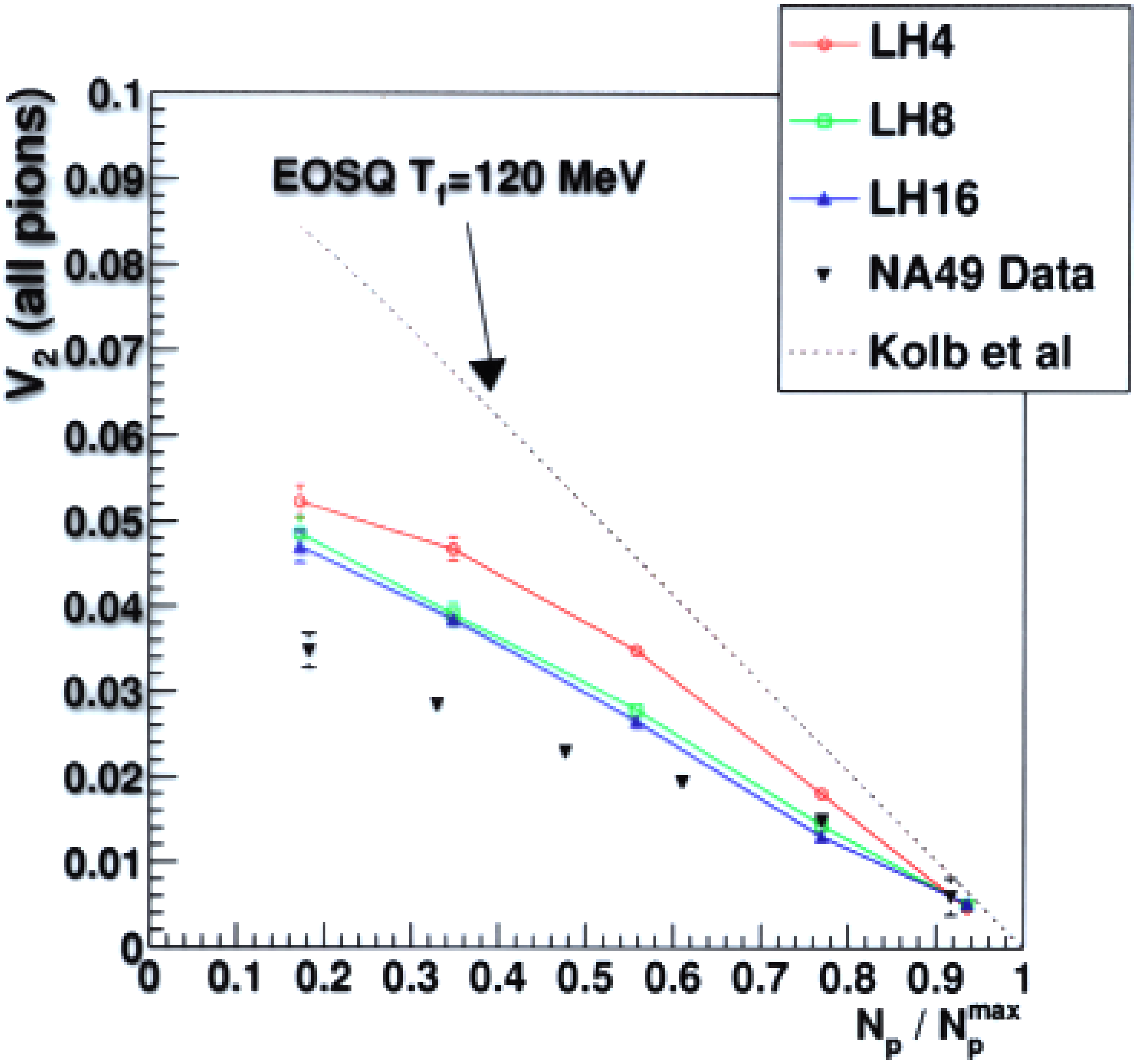


Bulk quantities (slopes, radii, etc...) no longer depend on Tswitch





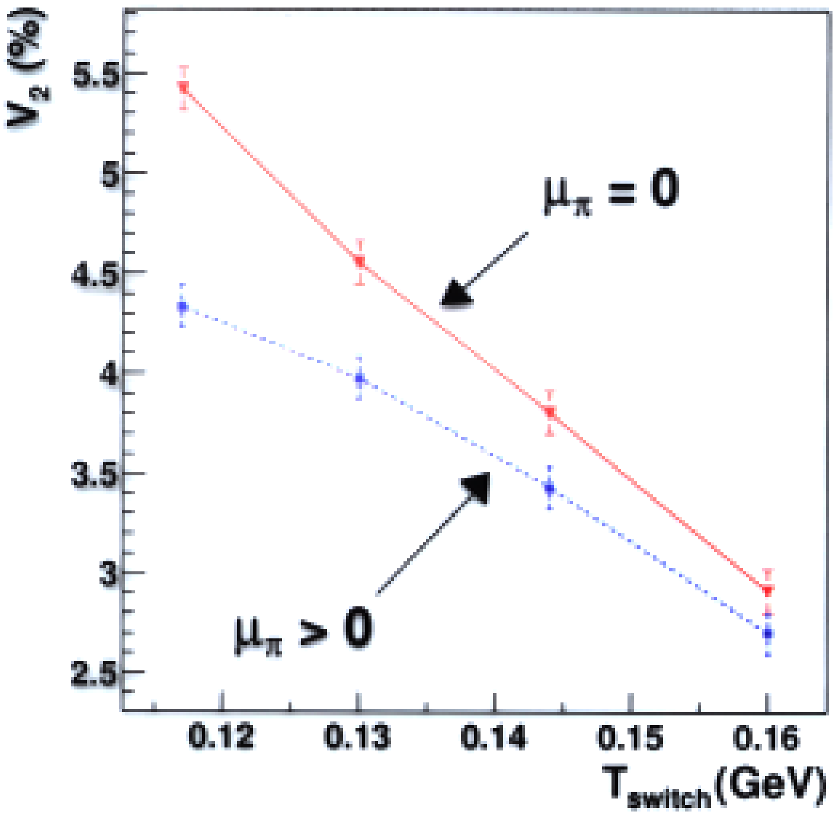
SPS Elliptic Flow

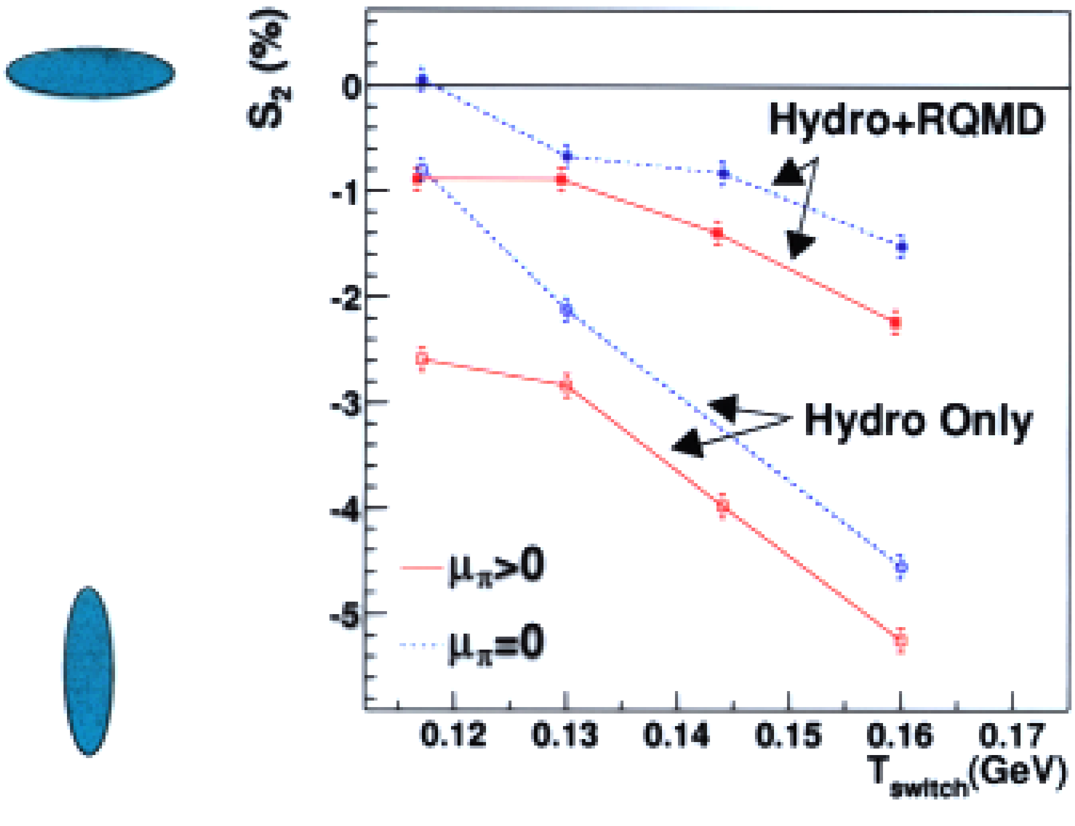


Favors LH8 or Softer

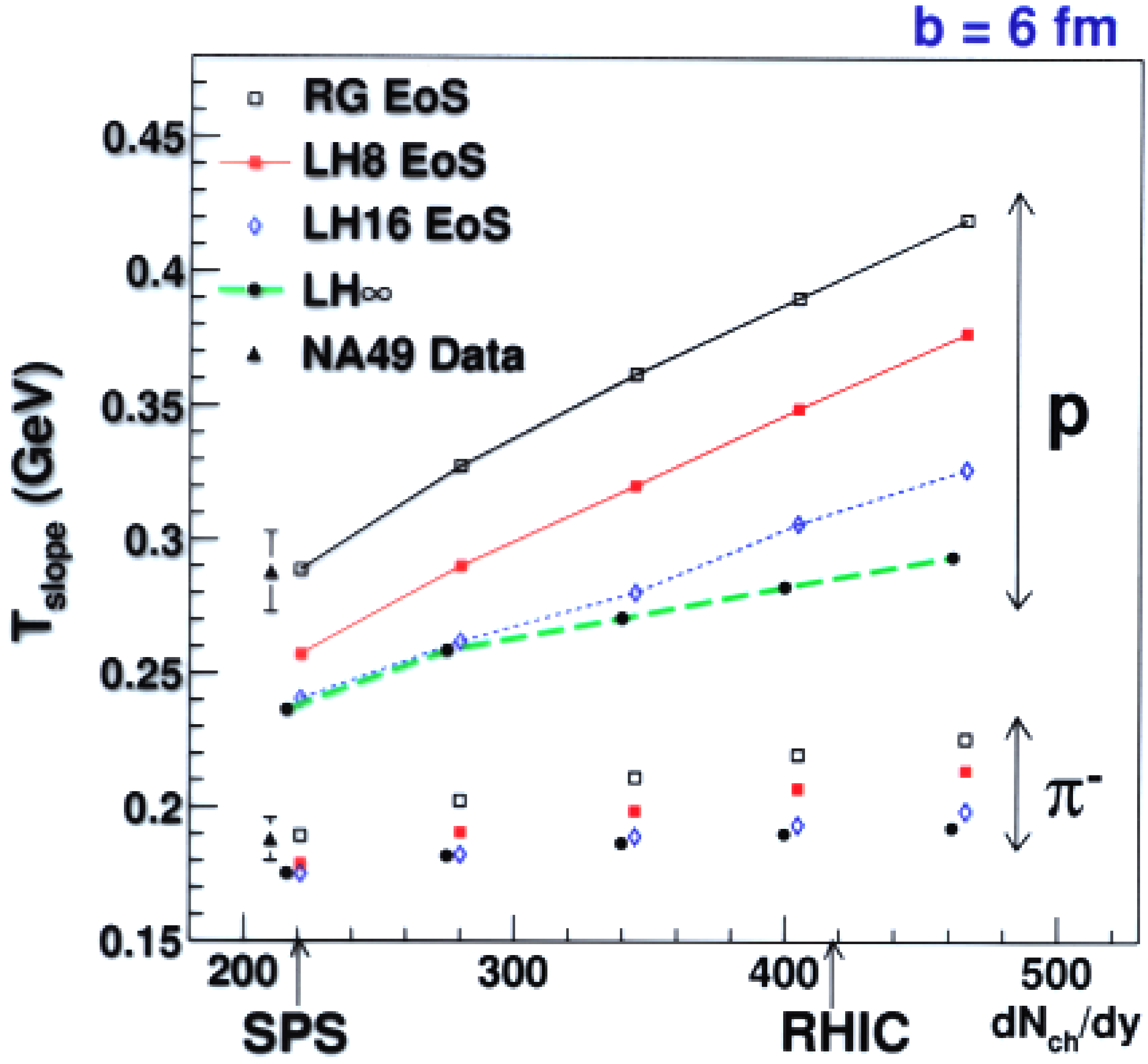
Elliptic Quantities STILL Depend on Tswitch

Is this Viscosity ?

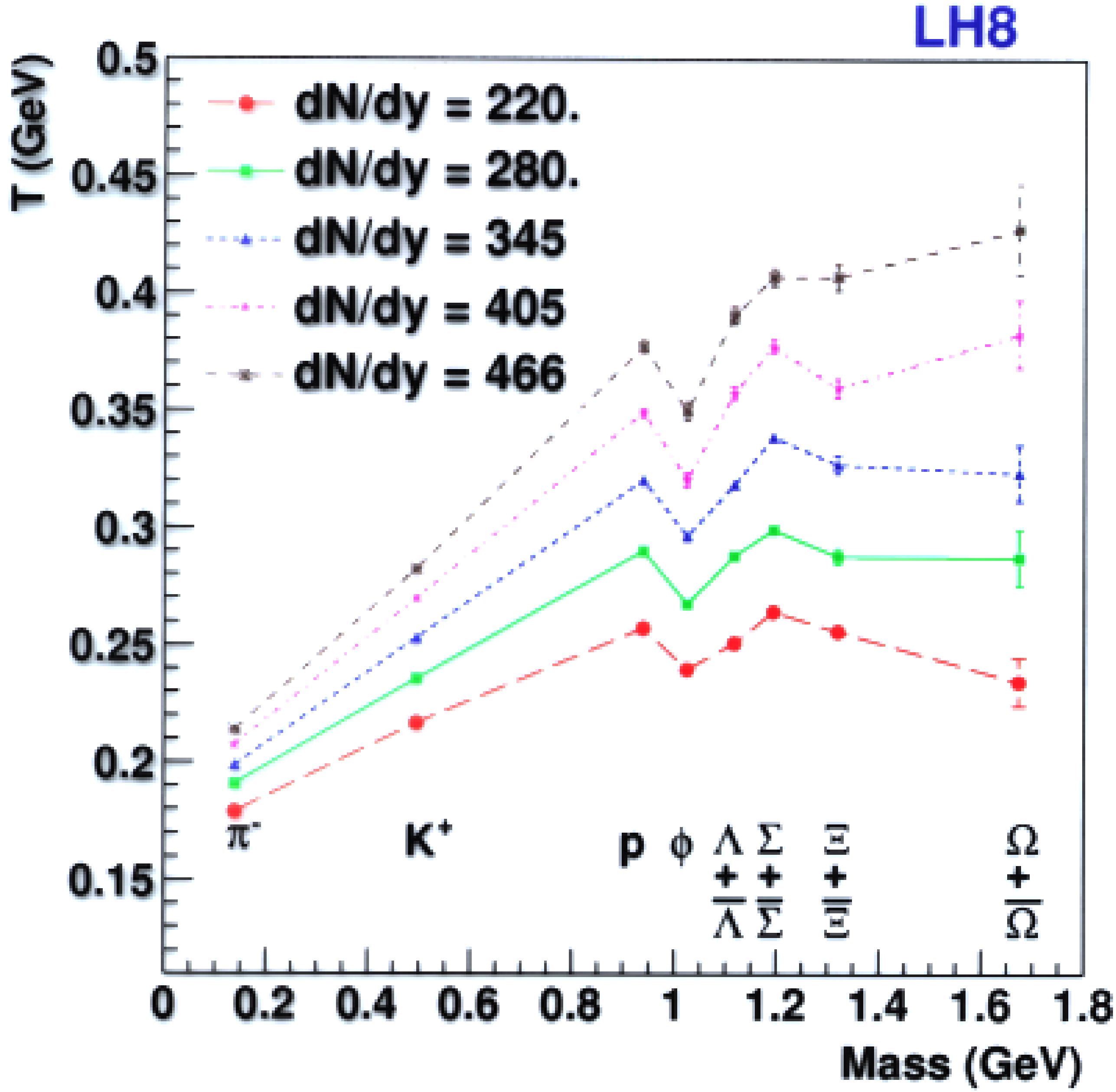




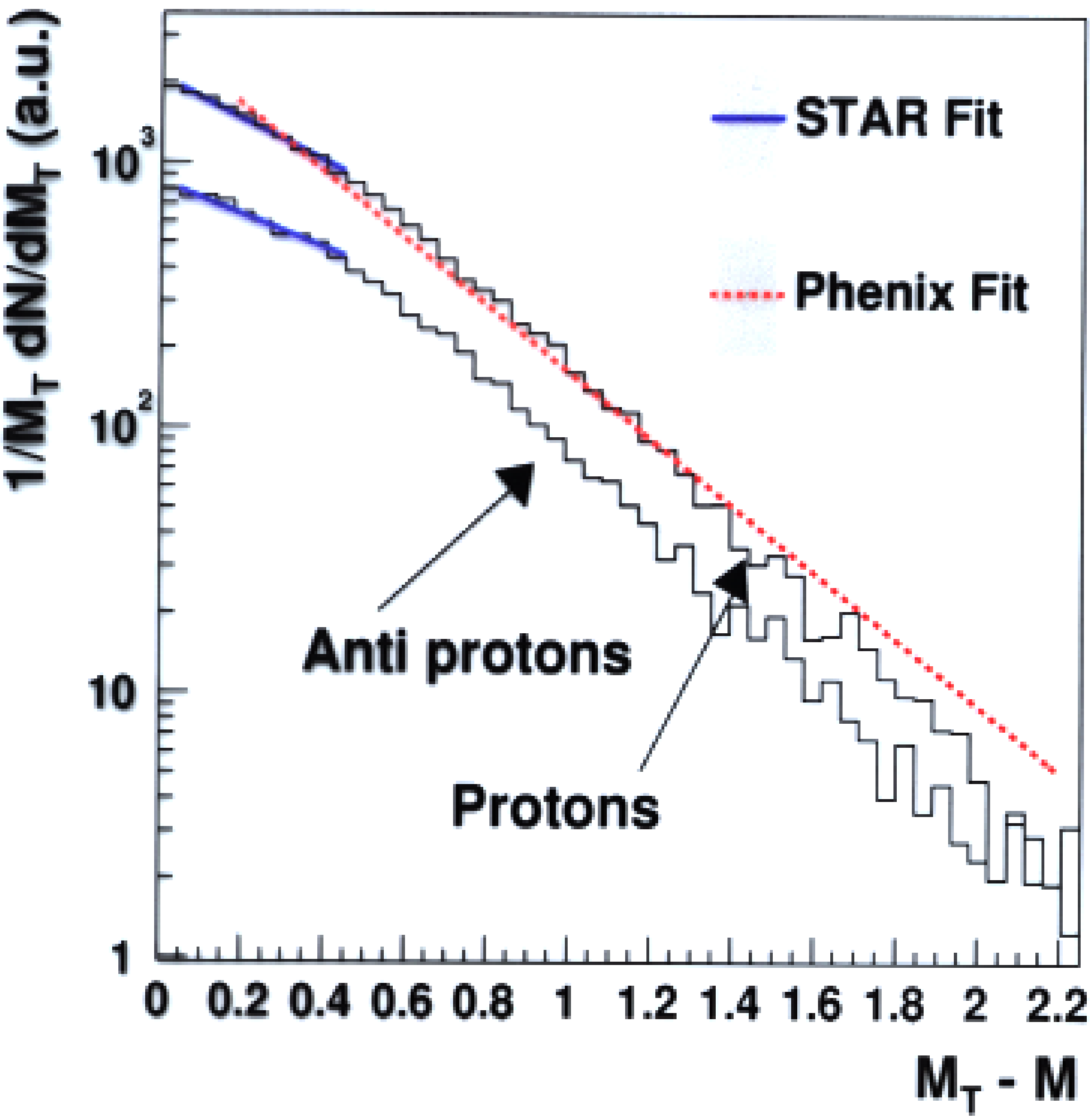
RHIC Radial Flow predictions



RHIC Radial Flow predictions

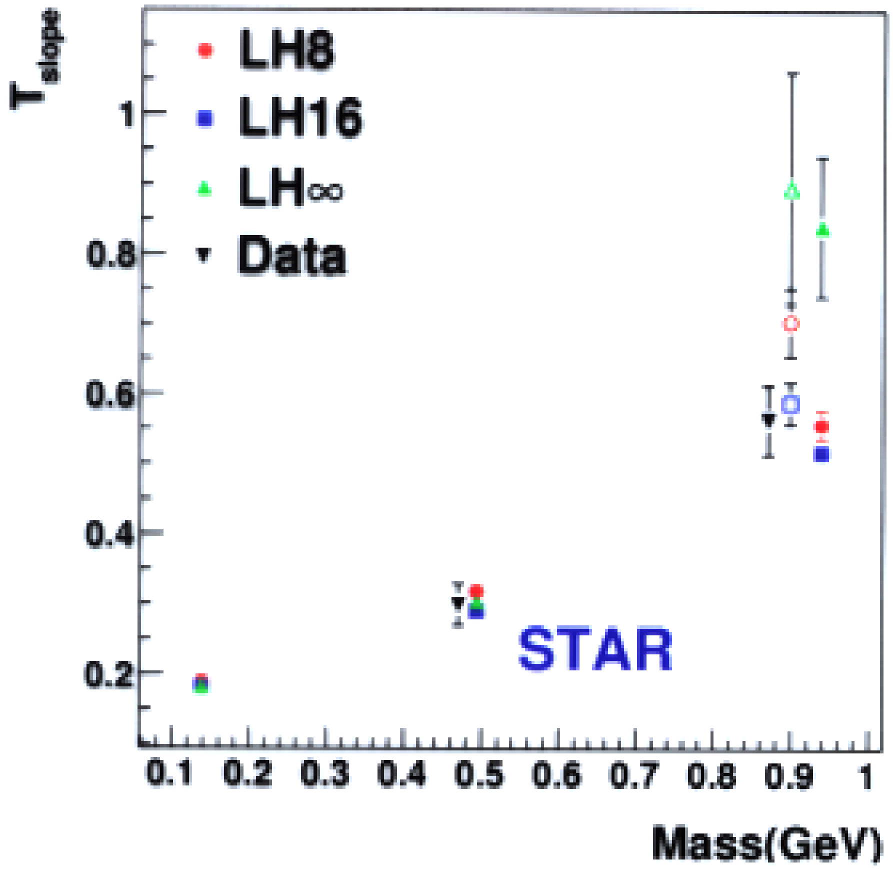


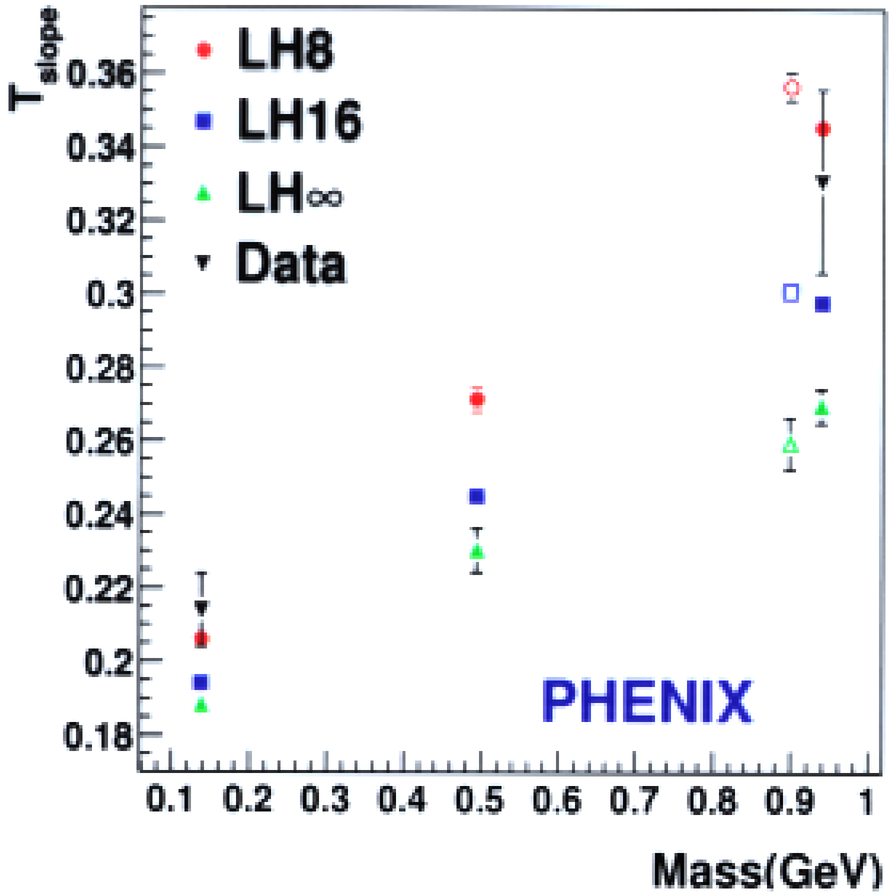
RHIC Radial Flow comparisons



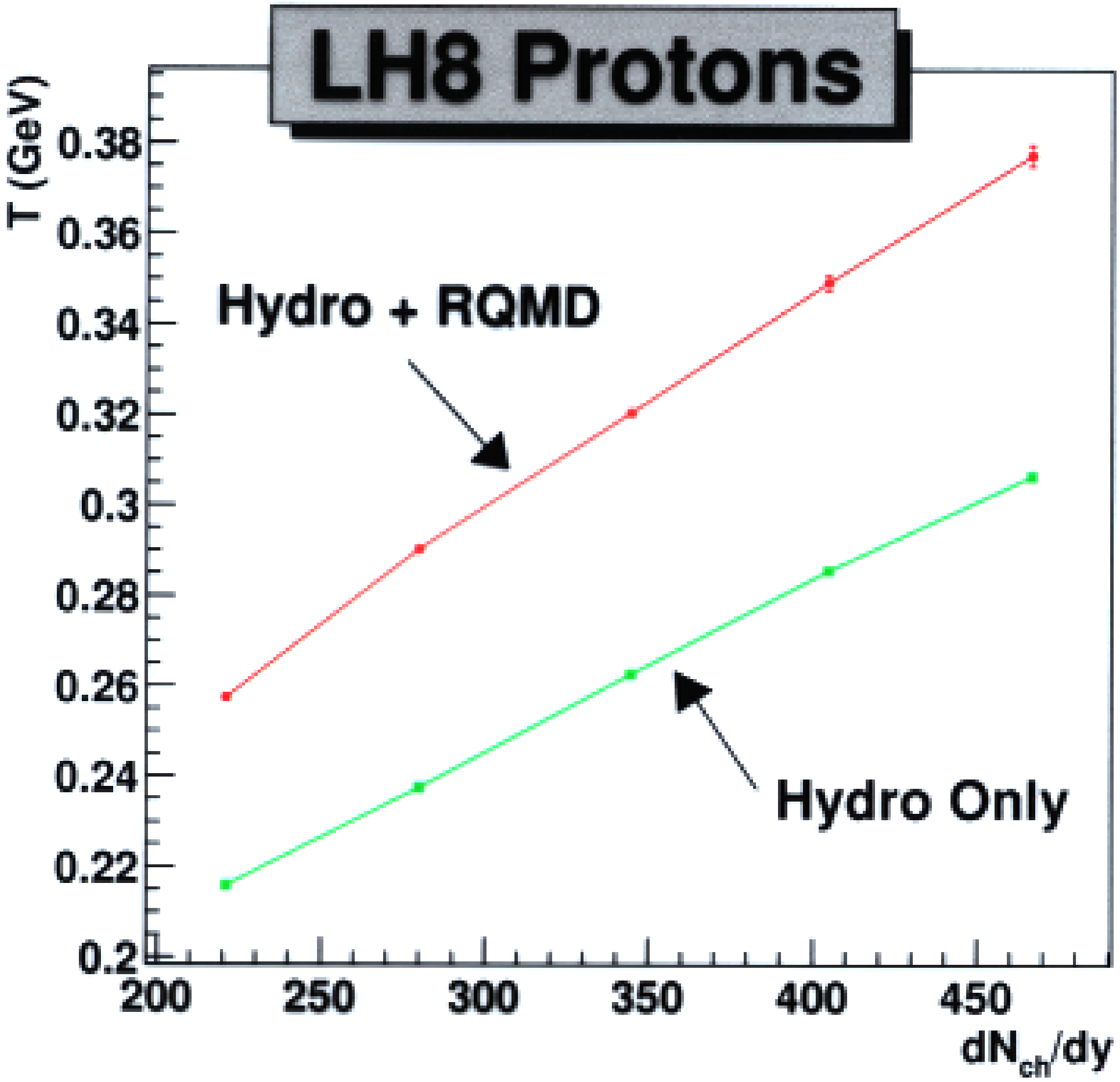
The curvature is a sign of Flow

RHIC Radial Flow comparisons

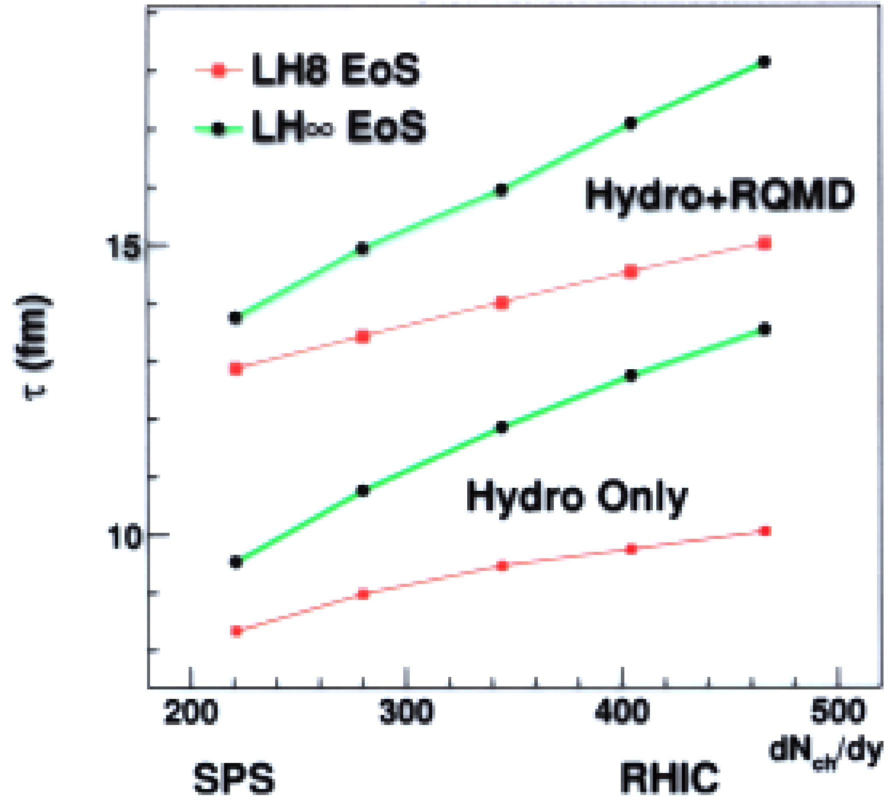


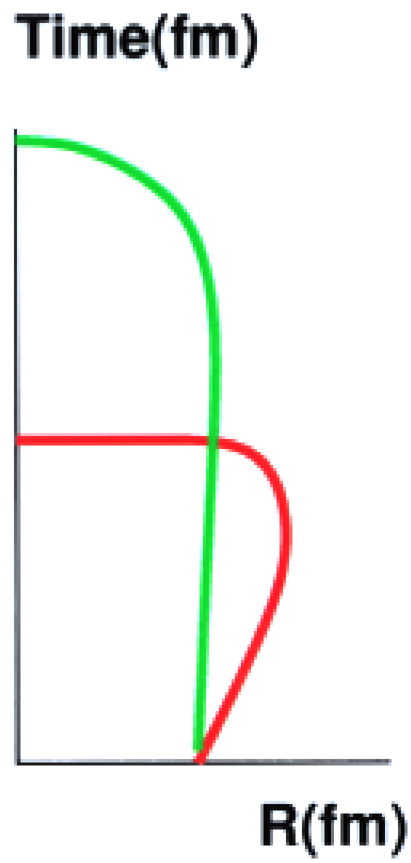


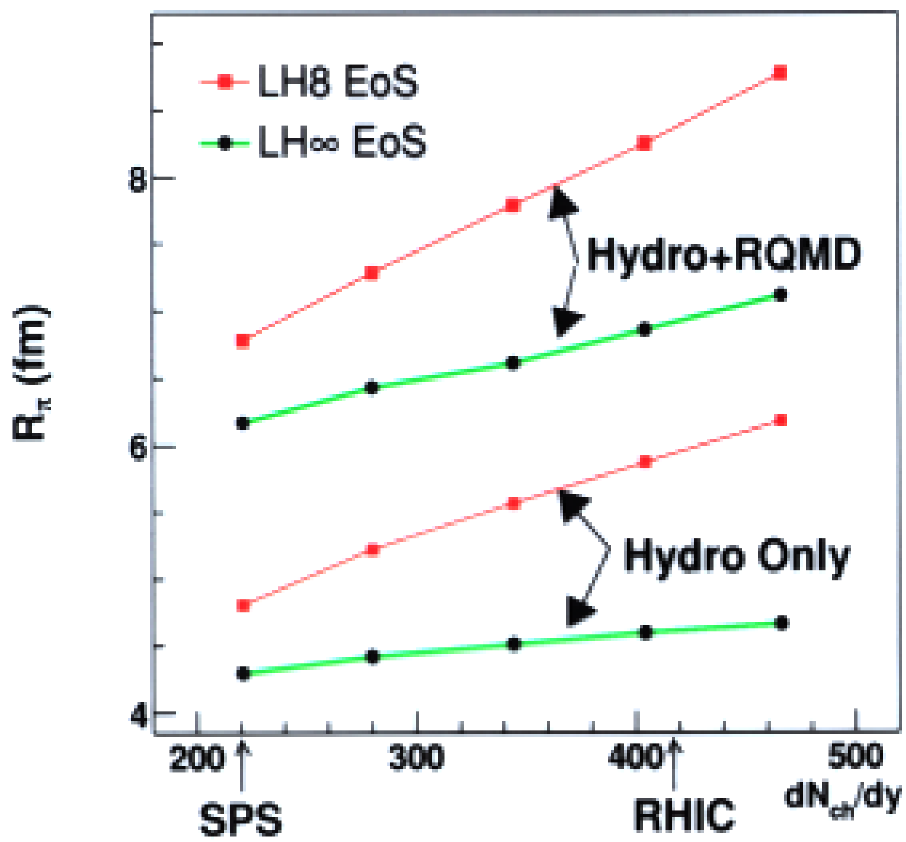
Radial Flow, RQMD contribution



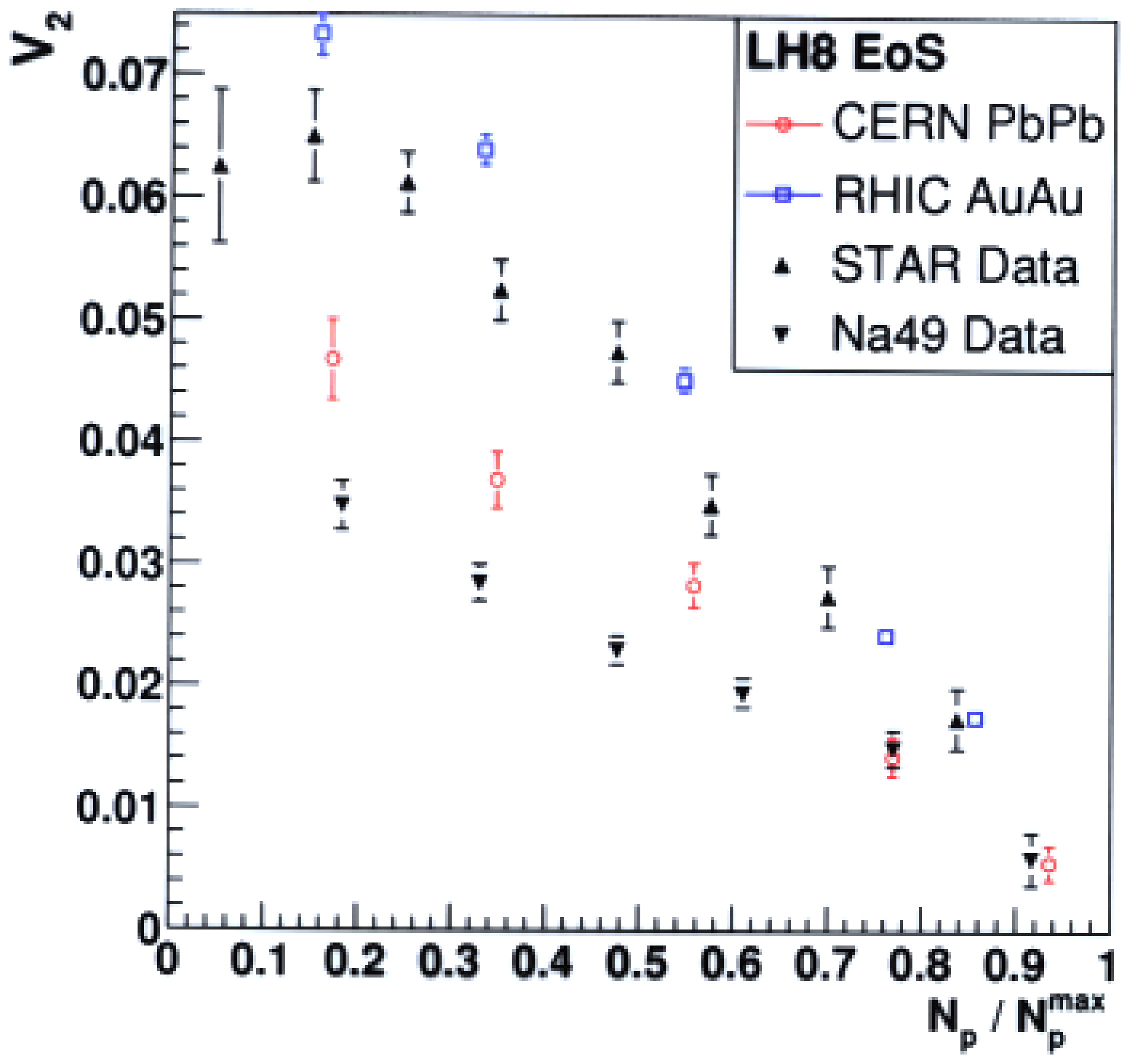
The Difference Between LH8 and Infinity



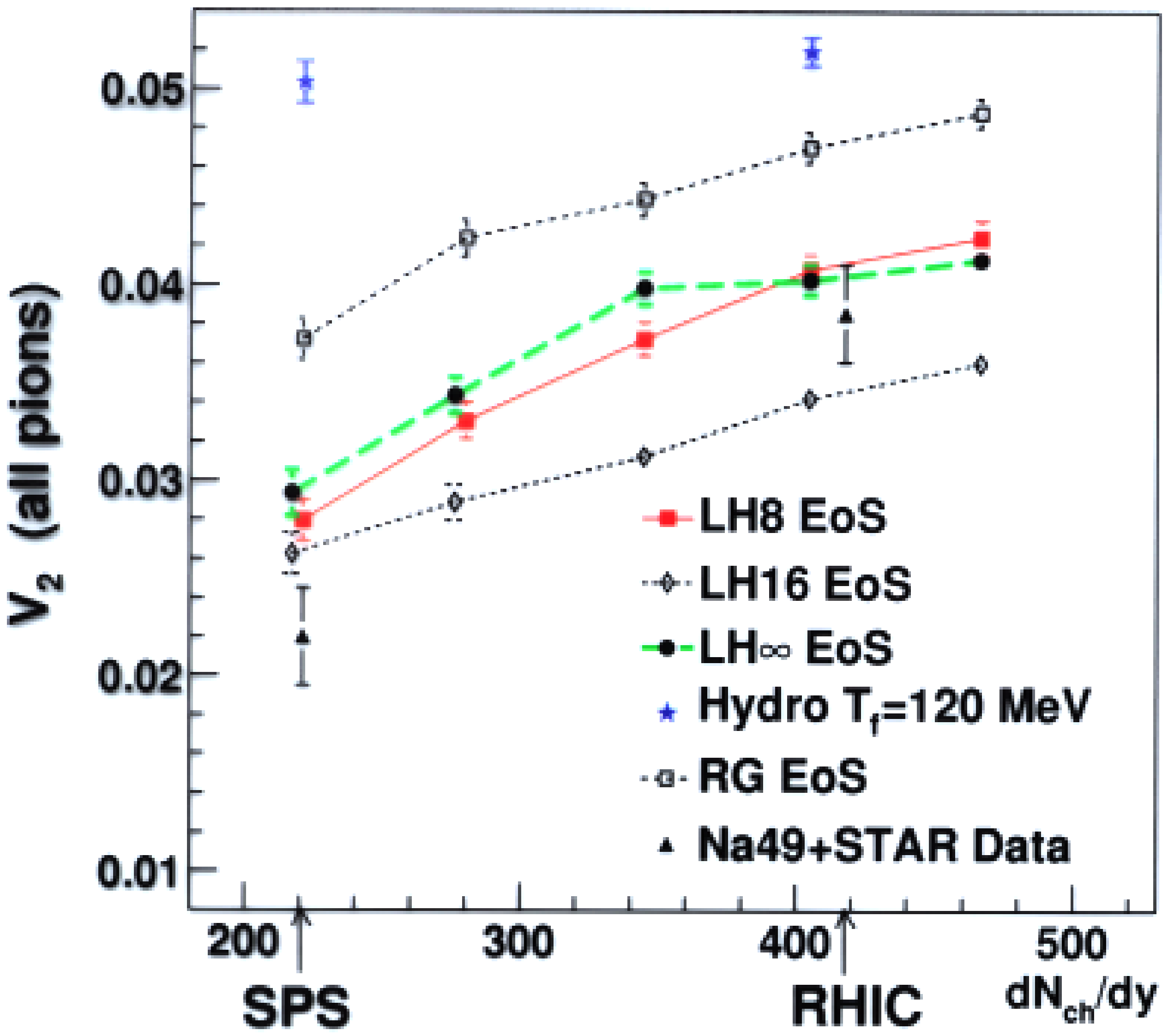




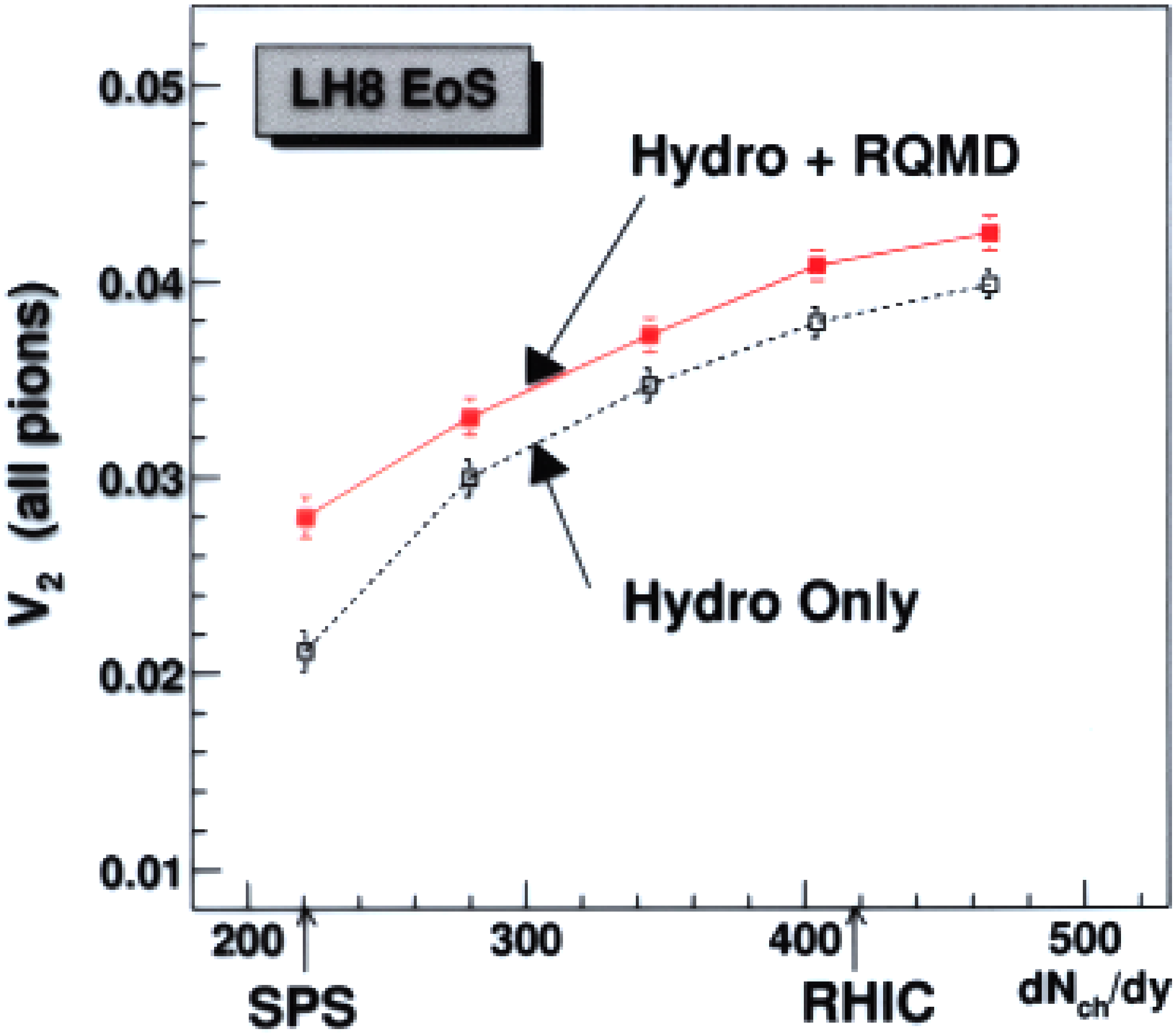
Elliptic Flow Predictions for RHIC



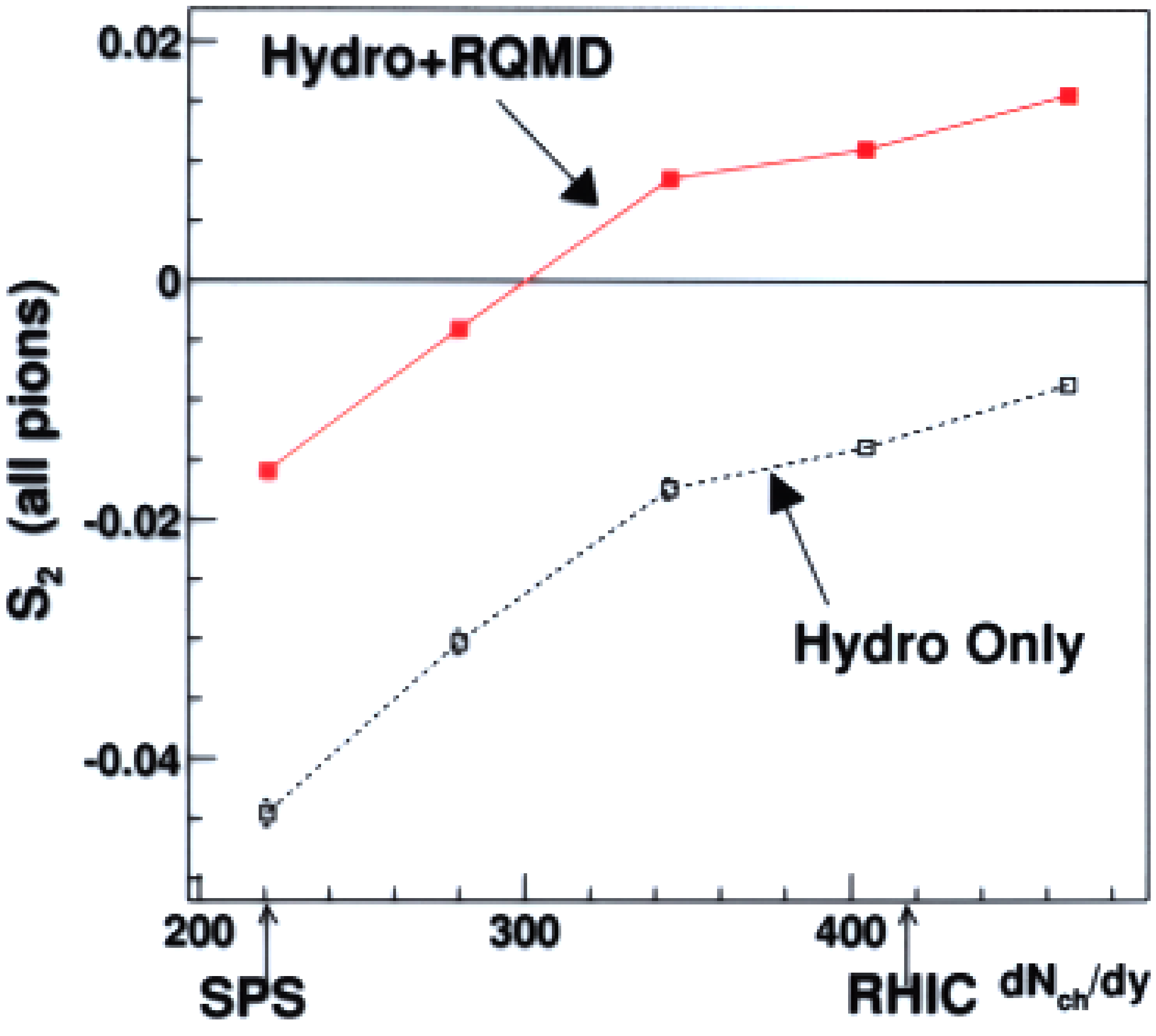
RHIC Elliptic Flow Results



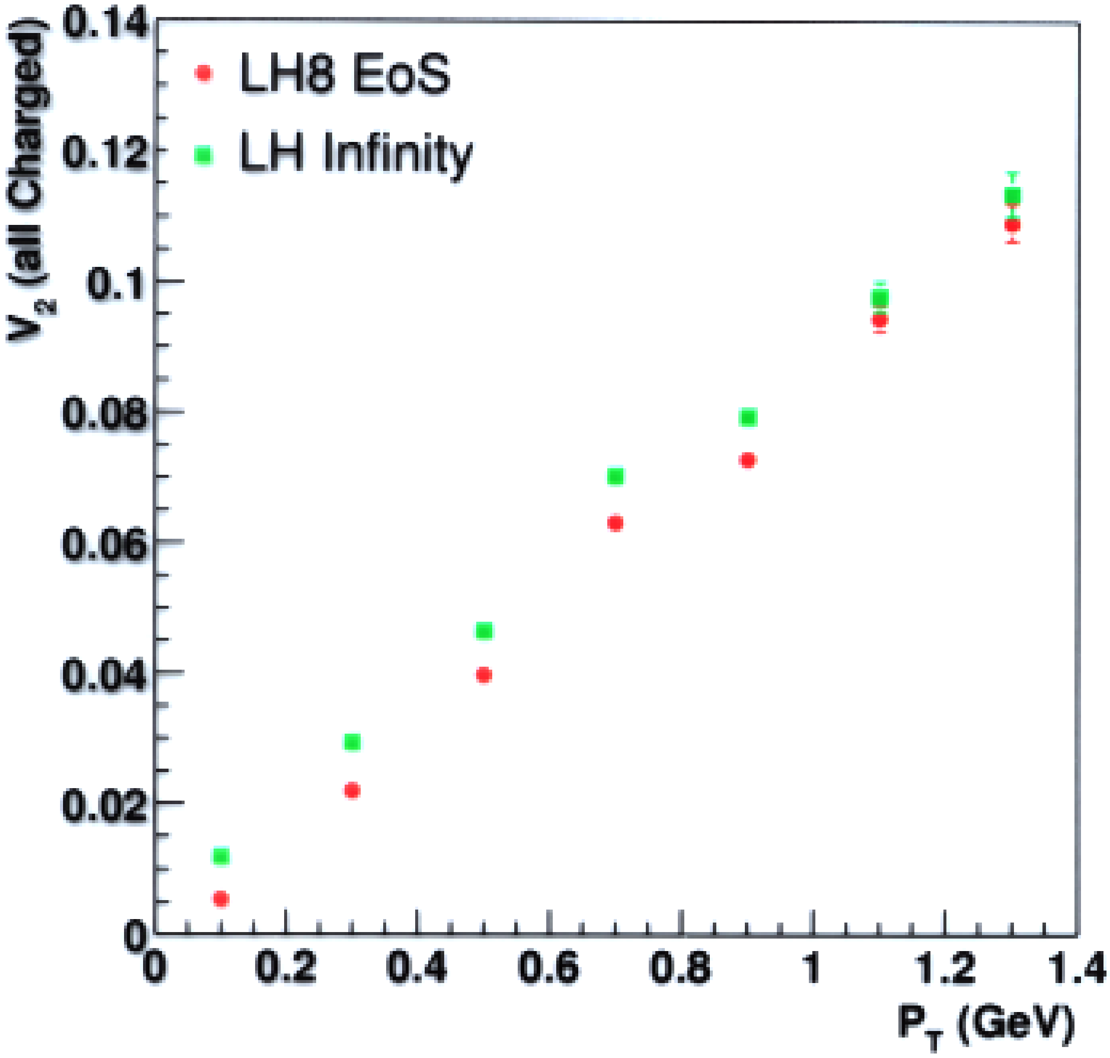
Elliptic Flow, RQMD contribution



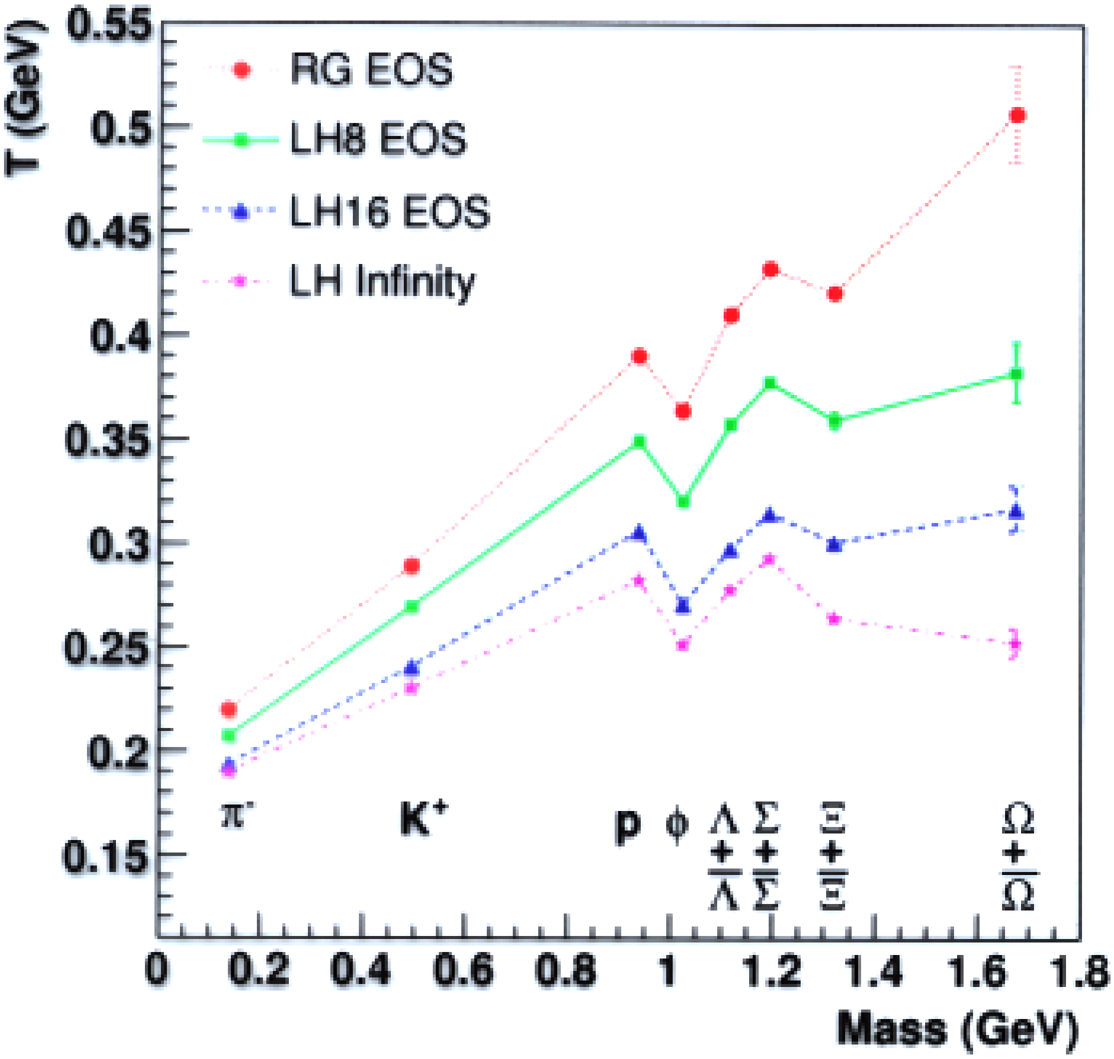
Elliptic Flow, RQMD contribution



Elliptic Flow, RQMD contribution



EoS Dependence at RHIC



Summary:

Model works at SPS for
Elliptic and Radial flow.

Model predicts at RHIC for
Elliptic and Radial flow.

Chemical Freezout is essential for
a smooth transition to RQMD

Can not separate plasma push
from softness (yet)