



Lund Experimental Group

- Main activity: ALICE
- Seniors:
 - Alice Ohlson [~~STAR~~, ALICE]: fluctuations, correlations and flow
 - David Silvermyr [~~PHENIX~~, ALICE, (sPHENIX)]: mainly hardware now, but previously J/ψ , N_{ch} , E_T , UPC
 - Peter Christiansen [~~BRAHMS~~, ALICE]: particle identification, spectra at low & high p_T , stopping
- Postdoc
 - Sumit Basu [ALICE]: will introduce himself 😊



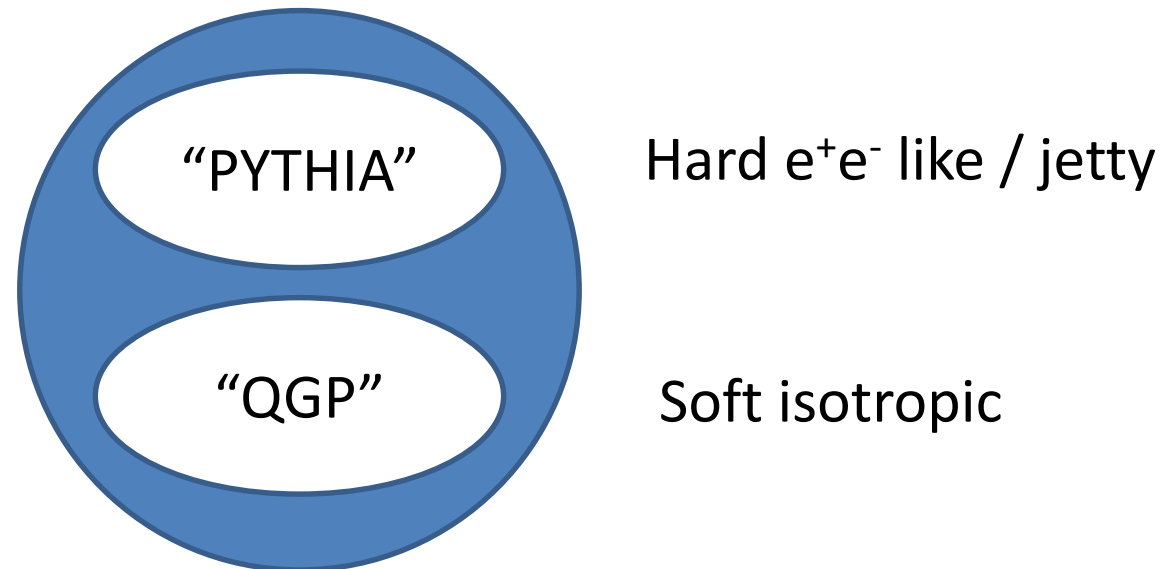
Lund Experimental Group

- Four relatively fresh PhD students:
 - Joey Staa
 - Strangeness fluctuations/correlations
 - Joachim Hansen (SMARTHEP, EU ITN)
 - Flow and Machine Learning (ML)
 - Kaare Iversen (SMARTHEP assoc.)
 - Charm balance and ML
 - Roman Nepeivoda
 - Strangeness production and balance
- Visitor: Donghai Liu (CCNU)
 - Strangeness production in jet and bulk

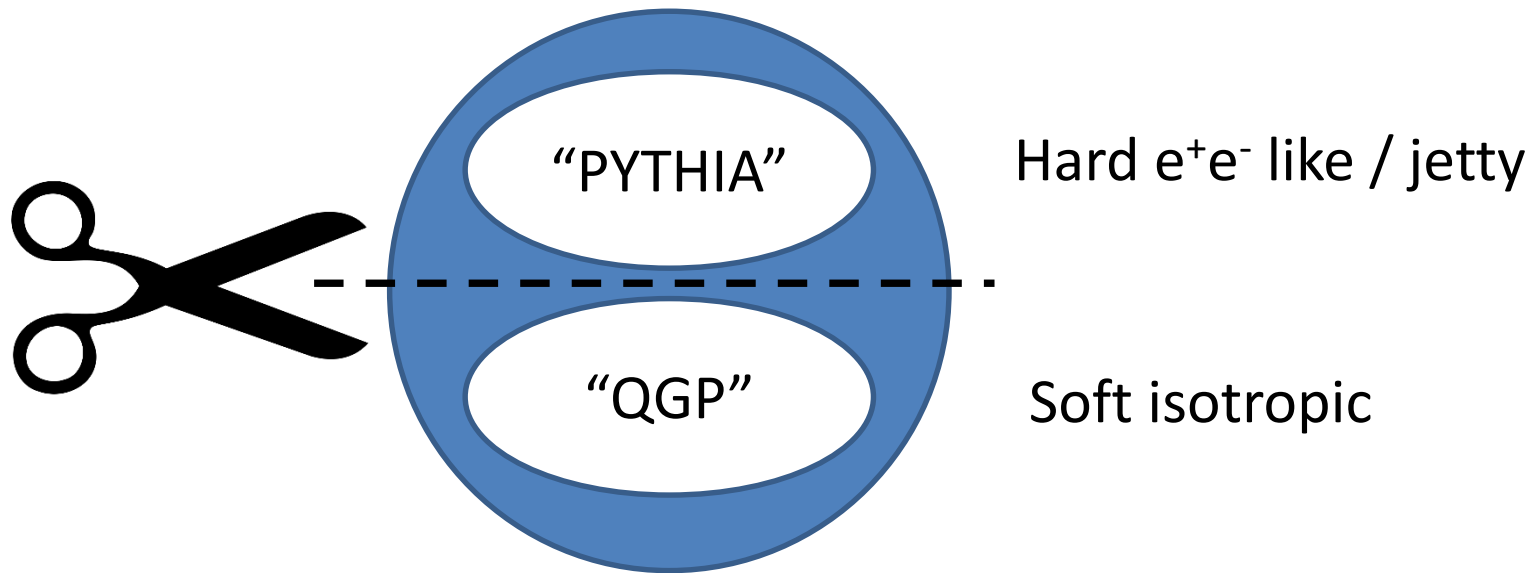


Intro to Lund ALICE physics: Naïve picture of two component model

- A pp event contains both e^+e^- /pp-simulation physics and QGP-like physics



Idea 1: try to separate the hard and the soft part

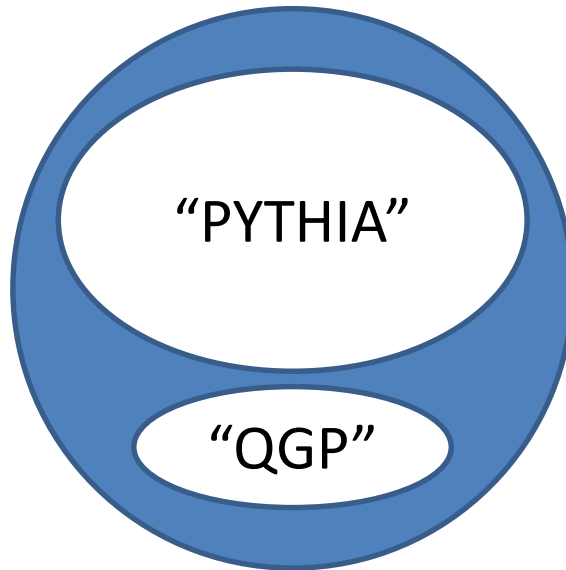


- Use Transverse Event Activity, R_T : [T. Martin et al](#)
- Results published for π , K , p : [JHEP 06 \(2023\) 027](#)
 - Hope for 2nd paper with ϕ , Λ , Ξ : [preliminary results](#)
- Lesson learned: the transverse region has its own issues (fluctuations) \rightarrow need models to interpret

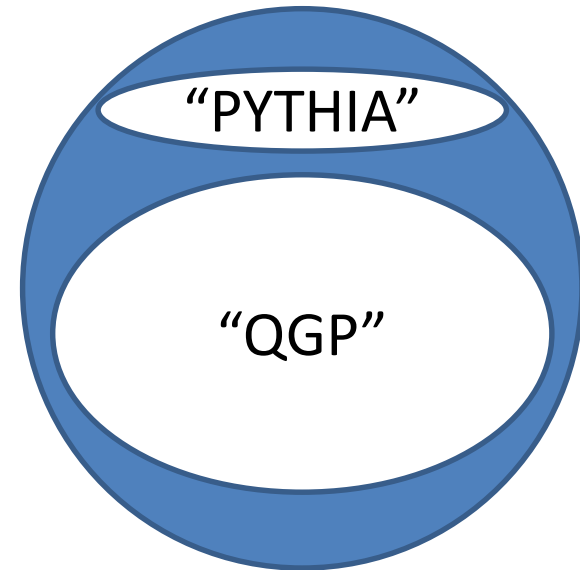


Idea 2: try to enhance/suppress the hard or the soft part

“Jetty” events



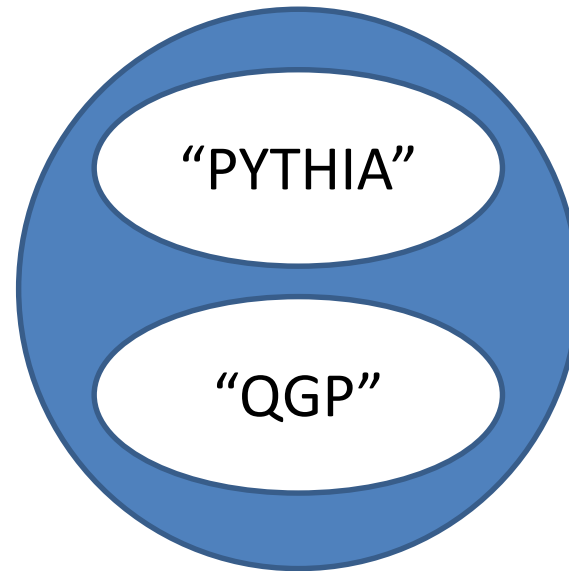
“Isotropic” events



- Use Transv. Spherocity, S_0 : UNAM (A. Ortiz & G. Paic)
- Paper in internal review: π , K , p , ϕ , K^* , Λ , Ξ ,
[link to proceeding](#)
- Lesson learned: the isotropic part dominates \rightarrow soft is the norm and jet-like physics the outlier



Idea 3: test if strangeness is produced the same way



Corona – strangeness balanced locally (?)

Core – strangeness balanced globally (?)

- Use strangeness balance: CLASH workshop
- Paper in internal review: Ξ - π , Ξ -K, Ξ -p Ξ - Λ , Ξ - Ξ : [preliminary results](#)
- Lesson learned: no indication for multiplicity change in pp (even Ξ/π varies) \rightarrow only one mechanism?





Outlook:

some ideas we consider now

- Charm balance
 - First angle: maybe QGP is GP \rightarrow light flavour quarks are produced at hadronization
 - Second angle: can we validate that J/ψ are really regenerated (correlations with open charm)
 - [Link to proceeding](#)
- Ultra small systems
 - Can we constrain models by going even smaller
 - A lot of new interesting results shown at IS
 - [Link to IS talk](#)