Initializing BSQ Across System Size With Open Source ICCING

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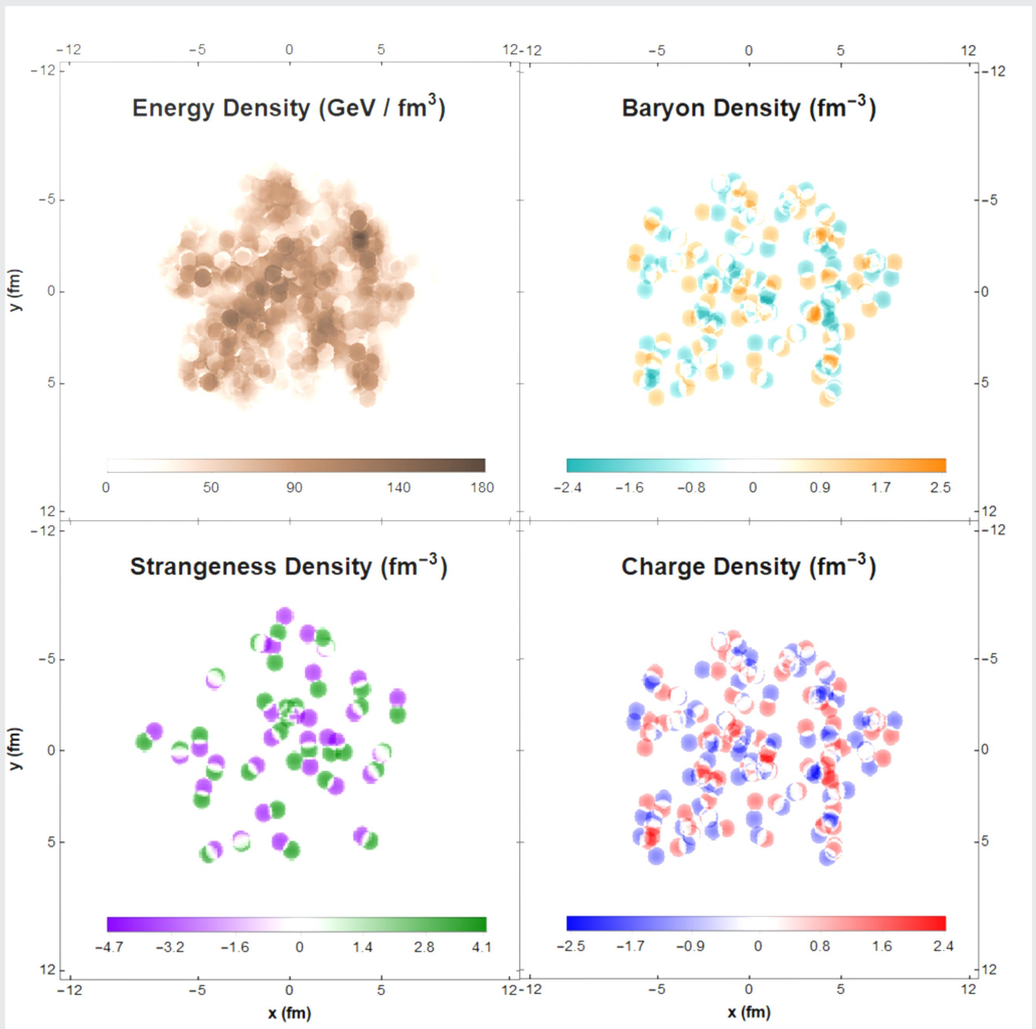
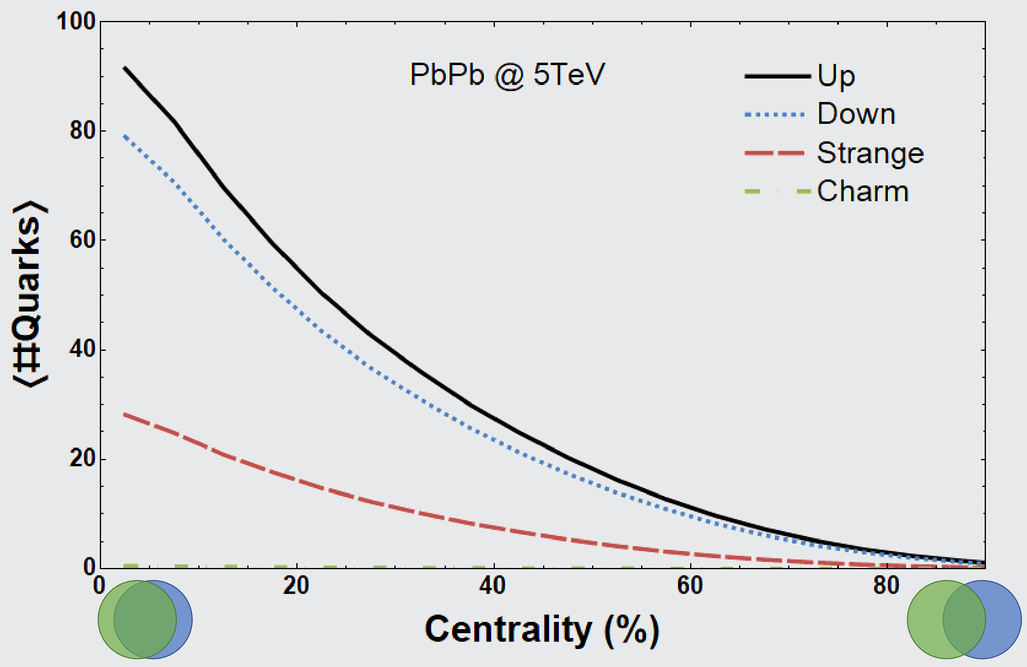
ICCING

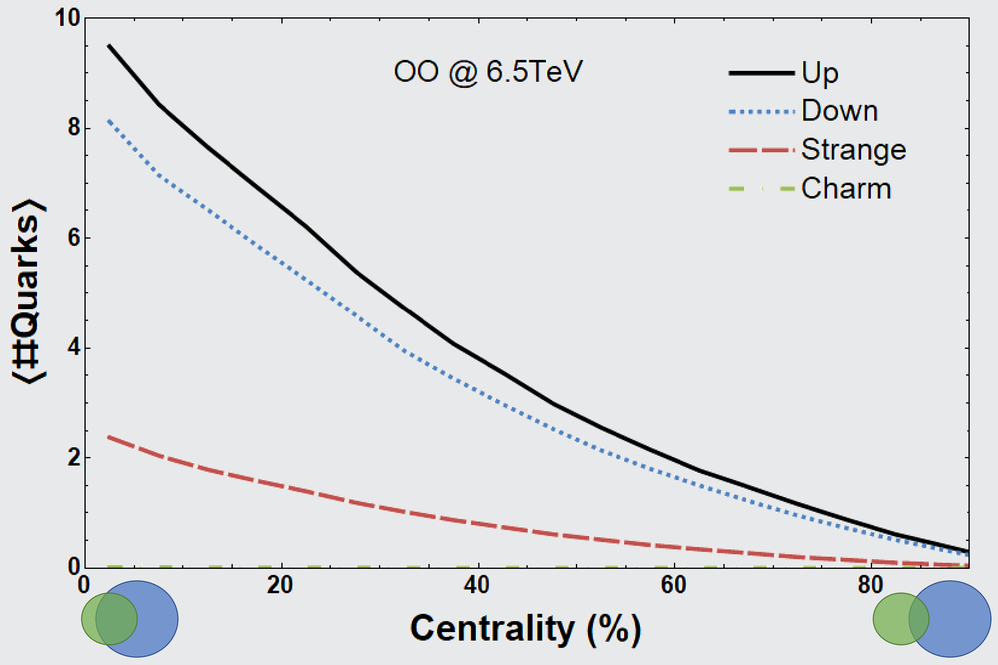
- ICCING (Initial Conserved Charges in Nuclear Geometry) samples a ($g \rightarrow qq^{-}$) splitting function
- ICCING in C++, open source soon



Quark Multiplicities Across System Size

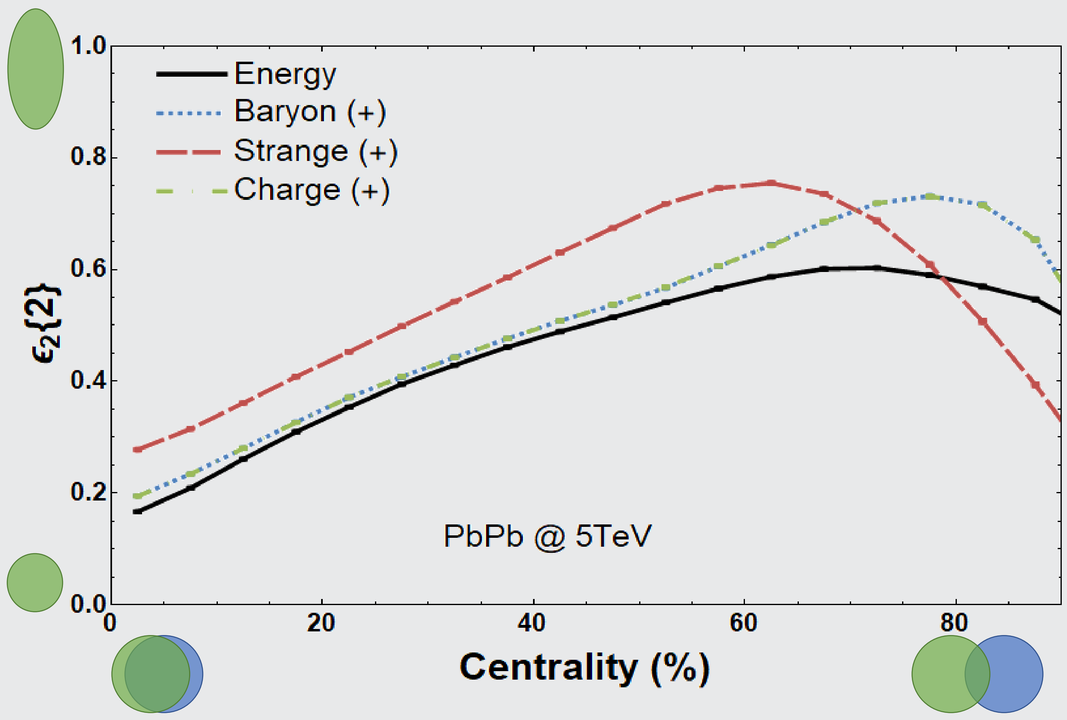
- Tenfold increase in quarks from OO to PbPb though same ratios
- Depends on α_s and gluon radius (r)
- Future
  - Retune α_s and r to obtain quark content from particle yields
  - More OO results





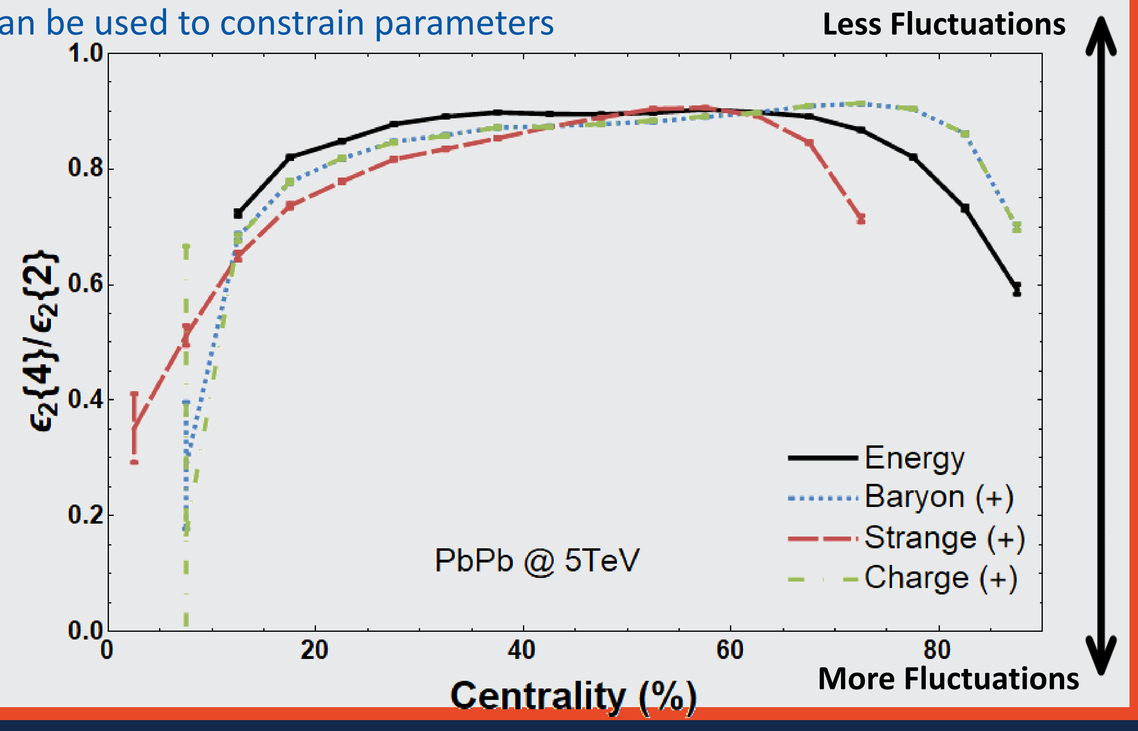
Energy and Conserved Charge Ellipticities

- ICCING energy $\epsilon_2\{2\}$ matches Trento
- Baryon/Charge follow energy up to 60% Centrality
- Strange quarks produced in hotspots explains difference from Baryon/Charge



Fluctuations in Ellipticity

- Trends hold from original analysis
- Baryon/Charge follows Energy trend but departs in magnitude
- Significant difference between Baryon/Charge and Strange
- Good estimate for final flow harmonic
- Can be used to constrain parameters



Conclusions and Future

- ICCING Quark multiplicities reproduced
- PbPb energy $\epsilon_2\{2\}$ matches previous results
- OO and PbPb multiplicities differ by 10x but contain same quark ratios
- Distinct difference in Strange and Baryon/Charge
- Baryon/Charge $\epsilon_2\{2\}$ tracks energy in central and midcentral, $\epsilon_2\{4\}/\epsilon_2\{2\}$ differs in magnitude
- $v_2\{4\}/v_2\{2\}$ can restrain parameters
- More OO results
- Publish open-source ICCING
- Will run in BSQ hydro code, See Travis Dore (IS Thur. 16:15) and Debora Mroczek (NT Mon. 18:40)

References

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