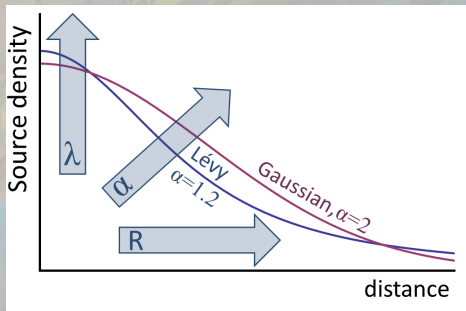


Space-time extent of hadron emission?

- Can be investigated via femtoscopy
- Measuring Bose-Einstein correlations
- Usually assumed Gaussian shape
- More general: Lévy-distribution



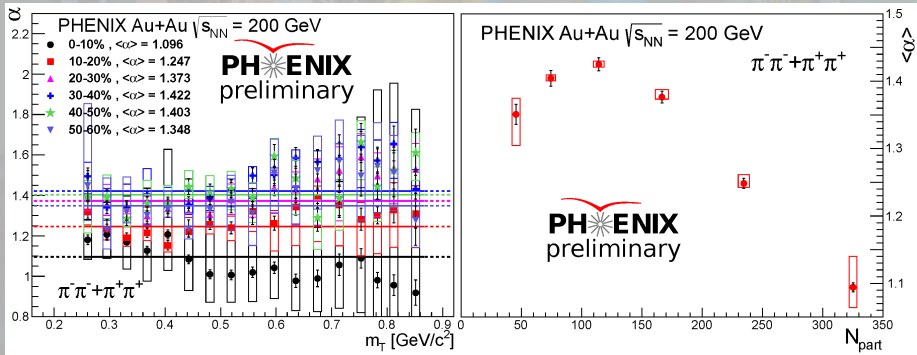
- Correlation function for Lévy source:

$$S(r) = \mathcal{L}(\lambda, R, \alpha) \iff C(q) = 1 + \lambda e^{-|Rq|^\alpha}$$

- Stability index $\alpha \equiv \eta$ spatial critical exponent
- Gaussian case: $\alpha = 2$, vicinity of the critical point: $\alpha = 0.5$

What is the shape of the source at 200 GeV?

- Far from Gaussian ($\alpha = 2$): $\langle\alpha\rangle_{m_T}$ between 1.0 and 1.45
- Non-monotonic behaviour versus centrality!



What is the Lévy system size?

- If $\alpha = 2$: no root-mean-square!
- Lévy scale R still meaningful, hydro scaling of $R^2 \sim \frac{1}{m_T}$
- Empirically observed new scaling variable $\hat{R} = \frac{R}{\lambda(1+\alpha)}$

