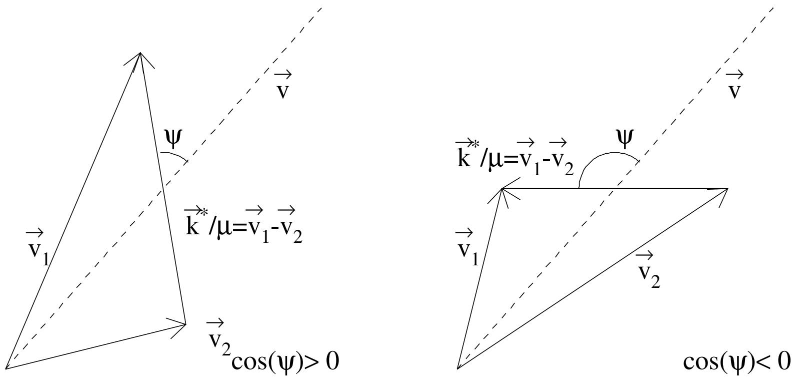
unlike particle correlations ($\pi^+\pi^-$,$\pi^\pm p$)

R.Lednicky, NA49 preliminary

sensitive to spatial/temporal difference of emission regions for different particle species

$\longrightarrow$ additional test of details of reaction models

compare correlation function C_2 for pairs emitted into/opposite the hemisphere of the pair $\vec{v_\perp}$ (out direction)



$R_+ = C_2(cos\psi > 0)$ $\qquad$ $R_- = C_2(cos\psi < 0)$

$\vec{k}^* = \frac{Q_{inv}}{2} = \vec{p_1^*} = -\vec{p_2^*}$ $\quad$ momenta in pair cms

$\vec{v_1} - \vec{v_2} = \frac{k^*}{\mu}$ $\quad$ relative velocity, μ reduced mass

Coulomb interaction dominates

evaluation in LCMS system:

$$\frac{R_+}{R_-} \sim 1 + \frac{\langle \Delta x^* \rangle}{a} \longrightarrow 1 + 2\frac{\langle \gamma_\perp(\Delta x - v_\perp \Delta t)\rangle}{a}$$

$$a = -388(\pm 223) fm \text{ , Bohr radius of } \pi^+\pi^-(\pi^\pm p)$$