Motivation

- Kaons are a good probe for nuclear EOS [1]
- Their propagation in nuclear medium likewise their production is affected by kaon-nucleon potential
- Flow measurements are essential input for models (HSD, IQMD, BUU...)
- Impact on astrophysics (kaon condensate in the core of neutron stars) [2]

Method and Results

Neutral kaons

- Reconstructed via decay into two charged pions
- Pion-pair selection criteria based on topology of weak kaon decay
- Azimuthal angle distribution relative to event plane angle is fitted with $I (\phi) = (1 - 2 \rho \cos(\phi - \phi_0) + 2 \rho^2 \cos(2(\phi - \phi_0)))$
- Obtained parameters are corrected for event plane resolution [5]

Positively charged kaons

- Only high quality tracks are selected
- Energy loss deposition in MDC and TOF detectors
- Fitting mass distribution of selected candidates and subtracting cubic background within region of interest (two sigma around mean value)
- Selecting only part of phase space with uniform acceptance
- Correcting for detector occupancy

Conclusions and Outlook

Neutral kaons

- Systematic effects are under investigation
- Combinatorial background subtraction works well thus it might be possible to relax topological cuts to increase statistics

Positively charged kaons

- Direct antiflow is decreasing with increasing event centrality
- Good qualitative and quantitative agreement with FOPI and KaoS results

References