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The $v_3^{1/3}/v_2^{1/2}$ ratio in PbAu collisions at $\sqrt{s_{NN}} = 17.3$ GeV - a hint of a hydrodynamic behavior

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The Fourier harmonics, v_2 and v_3 of negative pions are measured at center-of-mass energy per nucleon pair of $\sqrt{s_{\rm NN}}$= 17.3 GeV around midrapidity by the CERES/NA45 experiment at the CERN SPS in 0–30\% central PbAu collisions with a mean centrality of 5.5\%. The analysis is performed in two centrality bins as a function of the transverse momentum $\rm p_T$ from 0.05 GeV/c to more than 2 GeV/c. This is the first measurement of the $v_3^{1/3}/v_2^{1/2}$ ratio as a function of transverse momentum at SPS energies, that reveals, independently of the hydrodynamic models, hydrodynamic behavior of the formed system. For $\rm p_T$ above 0.5 GeV/c, the ratio is nearly flat in accordance with the hydrodynamic prediction and as previously observed by the ATLAS and ALICE experiments at the much higher LHC energies. The results are also compared with the SMASH-vHLLE hybrid model predictions.

Internet talk

No

Is this an abstract from experimental collaboration?

Yes

Name of experiment and experimental site

CERES/NA45 Collaboration

Is the speaker for that presentation defined?

Yes

Details

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