

pt-Angular power spectrum in ALICE events

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We study the particles emitted in the fireball following a Relativistic Heavy Ion Collision with the traditional angular analysis employed in cosmology and earth sciences, producing Mollweide plots of the p_t distribution of a few actual, publically released ALICE-collaboration events and calculating their angular power spectrum. With the limited statistics at hand, we do not find evidence for acoustic peaks but a decrease of C_l that is reminiscent of viscous attenuation, but subject to a strong effect from the rapidity acceptance which probably dominates (so we also subtract the $m=0$ component). As an exercise, we still extract a characteristic Silk damping length (proportional to the square root of the viscosity over entropy density ratio). The absence of acoustic-like peaks is also compatible with a crossover from the QGP to the hadron gas (because a surface tension at domain boundaries would effect a restoring force that could have driven acoustic oscillations). Presently an unexpected depression appears in the $l=6$ multipole strength, which should be revisited by the ALICE collaboration with full statistics to confirm or discard it.

List of tracks

Fluctuation in initial conditions, collective flow and correlations

Primary author: Prof. LLANES-ESTRADA, Felipe J. (Univ. Complutense de Madrid)

Co-author: Mr MUÑOZ MARTÍNEZ, Jose Luis (Univ. Complutense Madrid/Univ. Autonoma Barcelona-I-FAE)

Presenter: Prof. LLANES-ESTRADA, Felipe J. (Univ. Complutense de Madrid)

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