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Extraction of the specific shear viscosity of quark-gluon plasma from two-particle transverse momentum correlations VICTOR GONZALEZ, Wayne State University — Estimates of the specific shear viscosity, η/s, of the quark-gluon plasma formed in ultrarelativistic heavy-ion collisions at RHIC and LHC based on the longitudinal broadening of transverse momentum two-particle correlator, G_2, were published by both STAR and ALICE collaborations. In this work using the progressive evolution with collision centrality of the correlator longitudinal widths in both systems, values of η/s are computed as a function of charged particle pseudorapidity density using the Gavin ansatz which relates the G_2 longitudinal broadening to the specific shear viscosity. Freeze out times required for the use of the ansatz are computed using a linear fit of freeze out times reported as a function of the cubic root of the charged particle pseudorapidity density $(\mathrm{d}N_{\mathrm{ch}}/\mathrm{d}\eta)^{1/3}$ for different collision systems. Estimated values of η/s based on ALICE data exhibit little to no dependence on charged particle pseudorapidity density at LHC energy, while estimates obtained from STAR data hint that η/s might be a function of charged particle pseudorapidity density at top RHIC energy.

Claude Pruneau
Wayne State University

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