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Constraining models of initial state with v_2 and v_3 data from LHC and RHIC

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We present a combined analysis of elliptic and triangular flow data from LHC and RHIC using viscous relativistic hydrodynamics. Elliptic flow v_2 in hydrodynamics is proportional to the participant eccentricity ϵ_2 and triangular flow is proportional to the participant triangularity ϵ_3 , which means $v_n^{\text{exp}} = (v_n/\epsilon_n)_{\text{hydro}} \epsilon_n$, $n=2,3$. Experimental data for v_2 and v_3 combined with hydro calculations of v_n/ϵ_n thus provide us with the initial anisotropies ϵ_2 and ϵ_3 . By varying free parameters in the hydro calculation (in particular the shear viscosity), we obtain an allowed band in the (ϵ_2, ϵ_3) plane. Comparison with Monte-Carlo models of the initial state allows us to exclude several of these models.

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