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How to infer the shape of the QGP droplet from the data

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We propose an approach to extract the spatial anisotropy of QGP formed in ultrarelativistic heavy-ion collisions from measured high-pt observables R_{AA} and v_2 . We show, through analytical arguments, numerical calculations, and comparison with experimental data, that $v_2/(1 - R_{AA})$ reaches a well-defined saturation value at high p_{\perp} , which is in turn proportional to the initial anisotropy. We provide first anisotropy estimates from our approach, and compare them with predictions of various (fundamentally unrelated) initial state models. With expected future significant reduction of experimental errors, the anisotropy extracted from experimental data will strongly constrain the calculations of initial particle production in heavy-ion collisions and thus test our understanding of QGP physics.

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