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## Phenomenological predictions of 3+1d anisotropic hydrodynamics

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We make phenomenological predictions for particle spectra and flow in heavy-ion collisions using 3+1d anisotropic hydrodynamics (aHydro) including the effects of both bulk and shear viscosities. The dynamical equations necessary are derived by taking moments of Boltzmann equation allowing for three distinct momentum-space anisotropy parameters. The formulation is based on relaxation-time approximation for the collisional kernel and a lattice-QCD-based equation of state. Evolving the system to late times, we calculate particle production using THERMINATOR modified to account for an ellipsoidal distribution function. We obtain particle spectra for different particle types such as pions, kaons, and protons and elliptic flow,  $v_2$  as a function of centrality, transverse momentum, and rapidity. In our model, we have four free parameters, i.e. freeze-out temperature, initial energy density, initial momentum-space anisotropy, and shear viscosity to entropy density ratio. Using a multidimensional fit to LHC experimental data, we extract these parameters. We find good agreement between 3+1d aHydro and available experimental data.

### Summary

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