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Updates on anisotropic pure gauge ensembles with HISQ

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The primary goal of this project is the reconstruction of quarkonium spectral functions from thermal lattice correlators, relevant for the study of Quark-Gluon Plasma in heavy-ion collisions. To this end, we pursue the generation of fully dynamical anisotropic HISQ ensembles, aiming at a physical strange quark and a heavier-than-physical light quark mass, corresponding to a 300 MeV continuum pion mass. We report on tuning the gauge anisotropy and the lattice spacing of anisotropic pure gauge ensembles with tree-level Symanzik action using the gradient flow and compare various tuning schemes. We also discuss the simultaneous tuning of the strange quark mass and the quark anisotropy with HISQ, using spectrum measurements on quenched ensembles. We compare different ways to tune the quark anisotropy. Finally, we discuss pion taste splittings for HISQ at anisotropies up to 8.

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