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Lattice study of total momentum and free energy of rotating gluon plasma

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In this report we present the results of our study of rotating gluodynamics. In particular, we carry out lattice calculation of total angular momentum of rotating gluodynamics for various temperatures and angular velocities within local thermalization approximation. In this approximation, instead of simulating the full action, we use the action with the coefficients being fixed at some distance from the axis of rotation. The results for the total gluon momentum are used to construct the free energy of rotating gluon plasma.

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