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Hot QCD on Rotating Lattice with Staggered Fermions

We study the quantum chromodynamics (QCD) at finite temperature on a rotating lattice with Nf = 2+1 staggered fermions and with the projective plane boundary condition.
Contradict to most of the effective model calculations, we find that the chiral condensate is driven smaller while the Polyakov loop is driven larger by imaginary rotation, suggesting a rotational catalysis of chiral symmetry breaking and confinement by real rotation.
We determine the phase boundaries for both chiral and confinement-deconfinement phase transitions on the imaginary angular velocity and temperature plane.

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