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Search for the chiral phase transition in three flavor QCD at imaginary chemical potential

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The finite temperature transition of QCD with three degenerate flavors is expected to become a first order phase transition at small quark masses. It has been observed that introducing a sufficiently large imaginary chemical potential broadens the first order region and raises the critical quark mass to the numerically feasible regime. We report on our search for this first order transition at imaginary chemical potentials using three flavors of staggered quarks.

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