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## Complex saddle points in QCD at finite density

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We consider complex saddle points in finite-density QCD, which are constrained by charge and complex conjugations to make the effective action real. The method naturally incorporates color neutrality, and the Polyakov loop and the conjugate loop at the saddle point are real but not identical. Moreover, it gives rise to a complex mass matrix associated with Polyakov loops, reflecting oscillatory behavior in color-charge densities. These results may be experimentally relevant at GSI/FAIR.

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