

## Driving chiral phase transition with ring diagram

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We discuss the screening of a four-quark interaction by the ring diagram and its back-reaction on the quark gap equation in an effective chiral quark model. In consequence, a medium-dependent coupling is derived. This naturally reduces the chiral transition temperature in a class of models. It is also capable of generating the inverse magnetic catalysis at finite temperatures and magnetic fields. Our results provide a coherent description of inverse magnetic catalysis anchored to a reliable field-theoretical basis. We also demonstrate the important role of confining forces, via the Polyakov loop, in a positive feedback mechanism which reinforces the inverse magnetic catalysis.

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