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Impact of dynamical quarks on the soft kinematics of the three-gluon vertex

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We perform a detailed analysis of the key features of the transversely projected three-gluon vertex in the presence of two dynamical quarks, focusing on the soft-gluon limit, where one momentum vanishes. Our approach is based on the one-loop dressed Schwinger-Dyson equation derived from the 3PI effective action. A central assumption in our analysis is the validity of planar degeneracy, which states that the form factor of the three-gluon vertex can be accurately described by a single Bose-symmetric variable defining a plane in momentum space. Our preliminary results indicate that, although the overall behavior of the form factor closely resembles that observed in the quenched case, the presence of dynamical quarks significantly mitigates its infrared suppression. This effect shifts the zero crossing even deeper into the infrared region, in agreement with previous findings from lattice simulations.

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