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Effect of a Small Current Quark Mass on Bag Constant

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Abstract: A method for obtaining the small current quark mass effect on the dressed quark propagator within the Dyson-Schwinger approach is developed. From this the small current quark mass dependence of the bag constant is evaluated. It is found that the bag constant decreases with the increasing current quark mass and the contribution of the current quark mass cannot be dropped.

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Key words: Dyson-Schwinger approach, explicit and dynamical chiral symmetry breaking, bag constant, small current quark mass

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