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A Large k Asymptotics of Witten's Invariant of Seifert Manifolds

L. Rozansky[1]

Theory Group, Department of Physics, University of Texas at Austin, Austin, TX 78712-1081, U.S.A.

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Abstract: We calculate a large k asymptotic expansion of the exact surgery formula for Witten's $SU(2)$ invariant of some Seifert manifolds. The contributions of all flat connections are identified. An agreement with the 1-loop formula is checked. A contribution of the irreducible connections appears to contain only a finite number of terms in the asymptotic series. A 2-loop correction to the contribution of the trivial connection is found to be proportional to Casson's invariant.

Contents

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