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Possible f-wave pairing in the low-doping regime of monolayer MoS_2 CARSTEN HONERKAMP, JIE YUAN, RWTH Aachen University — We investigate the possible superconducting pairing state in a theoretical model for monolayer-MoS_2 by using the temperature-flow functional renormalization group (fRG). In the low doping regime, the dominant instability lies in the odd-parity pairing channel. It has a f-wave pairing structure within the D_{3h} point-group symmetry. We also compute the fRG phase diagram below the van-Hove filling. In the superconducting regime, the critical temperature grows with increasing doping, comparable to the experiments. We demonstrate that the pairing is driven by ferromagnetic fluctuations. When the band filling is close to the van-Hove filling, the system favors a ferromagnetic state.

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