Revisit of the one-dimensional extended Hubbard model by functional renormalization group method YUAN-YUAN XIANG, HoHai University — By the recently developed singular-mode functional renormalization group method, we studied the phase diagram of the one-dimensional extended Hubbard model systematically. In our scheme, p-wave bond-charge-density wave state and the tri-critical point naturally emerge without any artificial assumption or cutoff. Our phase diagram is consistent with that produced by density-matrix renormalization group method. Besides, we also analyzed the effects of spin-orbit coupling and doping on the various phases.

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