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Heavy Meson Spectrum Tests of the Oktay-Kronfeld Action

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To achieve smaller heavy-quark discretization errors, the OK action was proposed as an improvement of the Fermilab action. The OK action includes the dimension 6 and 7 operators necessary for tree-level matching to QCD through order $1/m_Q^3$ for heavy-light mesons and v^6 for quarkonium. To assess the improvement, we extend previous numerical tests with heavy meson masses by analyzing data generated on a finer lattice with the correct tadpole factors for the c_5 term in the action. We update the analyses of the hyperfine splittings for the rest and kinetic masses and the inconsistency parameter I .

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