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Near threshold states D_{s0}^* (2317) and D_{s1} (2460)

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Early theoretical studies and lattice simulations predicted the charmed-strange mesons D_{s0}^* (2317) and D_{s1} (2460) to be broad states lying above the thresholds, DK and D^*K , respectively. Experiments found narrow states below threshold. We present results of a high statistics $N_f = 2$ study with a lattice spacing of approximately 0.071 fm, taking explicitly into account the thresholds by including four quark operators. We find a lowering of the meson's masses relative to the two-quark operator results. Two pion masses with multiple volumes were employed, $Lm_\pi = 2.5, 3.4, 4.2$ and 6.7 at $m_\pi = 289$ MeV and $Lm_\pi = 2.8$ and 3.5 at $m_\pi = 150$ MeV. The volume dependence of the resulting spectrum is investigated according to Luescher's formula.

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