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Flavor content of the Lambda(1405)

We propose a novel method to identify the two-pole structure of the $\Lambda(1405)$. The two poles owe their origin to different quark flavor irreducible representations in the meson-baryon coupled-channel interactions, thus they should be individually manifested in reactions that provide good flavor eigenstate sources. Hadronic decays of charmonia into $\bar{\Lambda}\Sigma\pi$ and $\bar{\Lambda}(1520)\Sigma\pi$ are such reactions, and the flavor octet and singlet poles can be approximately singled out in these two decay modes. This SU(3) flavor filter works even considering the flavor symmetry breaking. With the huge charmonium data sets collected, it is promising to solve the long-standing $\Lambda(1405)$ puzzle employing the proposed flavor filter.

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