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Experiment: -

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Coupled channel study of a_0 resonances

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Abstract

A coupled channel model of the $a_0(980)$ and $a_0(1450)$ resonances has been constructed using the separable pion-eta and kaon-antikaon interactions. We have shown that two S-matrix poles corresponding to the $a_0(980)$ meson have significantly different widths in the complex energy plane. The kaon-antikaon to pion-eta branching ratio, predicted in our model near the $a_0(1450)$ mass, is in agreement with the result of the Crystal Barrel Collaboration. The kaon-antikaon interaction in the S-wave isovector state is not sufficiently attractive to create a bound $a_0(980)$ meson.

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