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A study of $\eta K \bar{K}$ and $\eta' K \bar{K}$ with the fixed center approximation to Faddeev equations

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In the present work we investigate the three-body systems of $\eta K \bar{K}$ and $\eta' K \bar{K}$, by taking the fixed center approximation to Faddeev equations. We find a clear and stable resonance structure around 1490 MeV in the squared $\eta K \bar{K}$ scattering amplitude, which is not sensitive to the renormalization parameters. Conversely, we get only an enhancement effect of the threshold in the $\eta' K \bar{K}$ amplitude that indicates the difficulty to bind the $\eta' K \bar{K}$ system as a consequence of a weaker $\eta' K$ interaction than the ηK one. We associate the $\eta K \bar{K}$ state found to the $\eta(1475)$.

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