

# The Seventh International Symposium on Chiral Symmetry in Hadrons and Nuclei

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*rhoK system within the framework of the fixed-center approximation to Faddeev equations*

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We perform a calculation for three body  $\rho K \bar{K}$  scattering amplitude by using the fixed-center approximation to Faddeev Equations, taking the interaction between  $\rho$  and  $\bar{K}$ ,  $\rho$  and  $K$  from the chiral unitary approach. We find a peak in the modulus squared of the three-body scattering amplitude, indicating the existence of resonance which can be associated to  $\rho(1700)$ . The mass is around 1700 MeV, and the width is smaller because we do not explicitly consider possible two body decay channels, which, as in other three body states studied along the same lines, play a small role in the structure of the states, but provide the natural decay channels because of the available phase space to produce these decay states.

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