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Study of phi(2170) at BESIII

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For e+e- collision between 2 and 3 GeV, excited states of rho, omega and phi could be produced directly, some of them are not fully studied yet, especially several resonances around 2GeV like rho(2000), rho(2150) and \phi(2170). Theorists explain phi(2170) as a traditional s s-bar state, s s-bar g hybrid, tetraquark state, Lambda Lambda-bar bound state, and phi KK resonance state, and predict very different decay width with different nature of phi(2170). In review of experimental side, the number of decay modes of phi(2170) are limited , and there is inconsistencies on mass and width of phi(2170). With energy scan data collected by BESIII detector between 2.0GeV and 3.08GeV, we performed PWA of e+e- -> K+K-pi0pi0, and extracted lineshape of K*(892)K*(892)bar, KK1(1460), KK1(1270) and KK1(1400), and compared BESIII results that of theory prediction (arXiv: 2001.04131). we report results on phi(2170)->phi eta'and phi eta, compare their ratio with that of hyprid prediction on phi(2170). We also present results on e+e- -> K+K- (Phys. Rev. D99, 032001 (2019)), phi K+K-(Phys. Rev. D100, 032009(2019)), omega pi0 and omega eta. We also use lineshape of e+e- -> eta'pi+ pi- to study rho(2000) and rho(2150).

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Presenter: HUANG, Guangshun (University of Science and Technology of China (CN))

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