



Contribution ID: 161

Type: **Poster submission**

Search for dark sector via charmonia decay at BESIII

Monday 5 August 2019 15:40 (20 minutes)

Low energy, high luminosity e^+e^- colliders are believed to be good places to search for exotic particles predicted in new physics models with dark sector phenomenology. BESIII, as the only running tau-charm factory, has great potential to probe these particles and models with the largest samples of directly produced charmonia. In this talk, we will report the recent results, including search for dark photon using the J/ψ decays in association with a pseudoscalar meson (η, η'). In both channels, no significant signal is observed in the mass region from 0.1 to 2.1(2.4) GeV/ c^2 , and the upper limits at the 90% confidence level on the product branching fraction of charmonia to pseudoscalar mesons and the subsequent decay of dark photon to e^+e^- are set, together with the mixing strength, as a function of dark photon mass.

Summary

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Session Classification: Poster Session (Mon/Tue)

Track Classification: Dark Matter Searches