Contribution ID: **115** Type: **Talk**

Dark sector and Axion-like particle search at BESIII

Tuesday 18 July 2023 17:15 (15 minutes)

Axion-like particles (ALPs) are pseudo-Goldstone bosons arising from some spontaneously broken global symmetry, addressing the strong CP or hierarchy problems. The BESIII experiment is a symmetric e+e- collider operating at c.m. energy from 2.0 to 4.95 GeV. With the world's largest data set of J/ψ (10 Billion), $\psi(2S)$ (2.6 Billion), and about 25 fb-1 scan data from 3.77 to 4.95 GeV, we are able to search various dark sectors particles produced in e+e- annihilation and meson decay processes. In this talk, we report the search for dark photon candidate in $e^+e^- \to \gamma A$' with invisible decay. The invisible decay of a light Higgs boson A^0 in $J/\psi \to \gamma A^0$ and in Λ/Λ_c decays is also searched. In addition we perform searches for an Axion-like particle with mass O(GeV) in $J/\psi \to \gamma A$, with $A \to \gamma gamma$.

Primary author: PRASAD, Vindhyawasini

Presenter: PRASAD, Vindhyawasini

Session Classification: Dark Matter

Track Classification: Beyond the Standard Model