



Contribution ID: 14

Type: **not specified**

Search for dark sector at BESIII

Wednesday, 17 October 2012 10:30 (35 minutes)

At BESIII, with 106 million $\psi(2S)$ events at BESIII, we have searched for a light Higgs-like boson A_0 in the process $\psi(2S) \rightarrow \pi^+\pi^- J/\psi$, $J/\psi \rightarrow \gamma A_0$, $A_0 \rightarrow \mu^+\mu^-$. We set 90% confidence level upper limits on the product branching fractions for $J/\psi \rightarrow \gamma A_0$, $A_0 \rightarrow \mu^+\mu^-$ that range from 4×10^{-7} to 2.1×10^{-5} , depending on the mass of A_0 , for $M(A_0) < 3.0 \text{ GeV}/c^2$. Using $J/\psi \rightarrow \phi \eta$, $\phi \rightarrow \eta \pi^+\pi^-$ in 225 million J/ψ decay events, we also make an updated analysis for $\eta \rightarrow \text{invisible}$ decay. No evidence is found for these rare decays, and upper limits at 90% confidence level are set, which are 5-10 times stringent than previous limits set by the previous BESII experiment.

Primary author: Mr FU, Jinlin (Nanjing University)

Presenter: Mr FU, Jinlin (Nanjing University)

Session Classification: Electron-positron collider experiments I