Contribution ID: **27** Type: **not specified**

Search for nearly-degenerate higgsinos using forward detectors at the LHC

Supersymmetric models with nearly-degenerate light higgsinos provide a consistent solution to the naturalness problem under rigorous constraints from current experimental searches for sparticles. However, it is challenging to probe the compressed scenarios at collider experiments due to the hard-to-detect soft final states. To overcome this issue, strategies have been proposed to take advantage of the photon fusion along the ultraperipheral collision at the Large Hadron Collider, which are feasible with the forward detectors installed at the ATLAS and CMS detectors. In this report, I will present our recent work on search strategies for the chargino pair production via photon fusion at the 13 TeV LHC, through both full-leptonic and semi-leptonic channels, realizing a good sensitivity on the chargino mass $m_{\tilde{\chi}_1^\pm}$ and its mass difference with the neutralino $\Delta m(\tilde{\chi}_1^\pm, \tilde{\chi}_1^0)$.

Primary author: 周, 航 (常州大学)

Presenter: 周, 航 (常州大学)