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Search for new physics in the four lepton final state in CMS OTMAN CHARAF, MAYDA VELASCO, Northwestern Univ, CMS COLLABORATION — Many recent studies by BaBar, LHCb, Belle, ATLAS and CMS have published intriguing signs of new physics physics known as "B anomalies". We are interested here in the anomaly related to the process b ->sll. Many flavour changing neutral currents involve the existence of new vector bosons often named Z'. On the other hand, a link between the Higgs sector and the dark matter represents an interesting scenario to be probed at the LHC. Such models predict the existence of so-called dark photons that can decay into two leptons. We explore the possible implications of these two sets of models in the four lepton final state. This topology constitutes a very clean signature. The analysis techniques will be developed with the estimation of the irreducible and reducible background contributions. The pairing algorithms will be presented as well as the statistical procedure to put limits on the models.

Otman Charaf
Northwestern Univ

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