

Abstract Submitted
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Search for Direct Production of Dark Leptophilic Scalar ROMULUS GODANG, Univ of South Alabama, BABAR COLLABORATION — Physics beyond the Standard Model predicts the existence of new gauge singlets which is lighter than the weak scale. The new scalars with masses in the MeV to GeV range could be weakened if the scalars interact predominantly with leptons. Based on a data sample of 540/fb at the $\Upsilon(2S)$, $\Upsilon(3S)$, and $\Upsilon(4S)$ resonances collected by the BABAR Experiment at SLAC, we report a new dark leptophilic scalar produced mainly via final-state radiation from tau leptons at e^+e^- collider. The limits significantly improve upon the previous constraints over a large range of masses below dimuon threshold.

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