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Search for Large Extra Dimensions via Observations of Neutron Stars with Fermi–LAT[1] BIJAN BERENJI, ELLIOTT BLOOM, KIPAC-SLAC, Stanford University, REPRESENTING THE FERMI-LAT COLLABORATION — Large extra dimensions (LED) have been proposed to account for the apparent weakness of gravitation. These theories also indicate that the postulated massive Kaluza-Klein (KK) gravitons may be produced by nucleon-nucleon bremsstrahlung in the course of core collapse of supernovae. Hannestad and Raffelt have predicted energy spectra of gamma ray emission from the decay of KK gravitons trapped by the gravity of the remnant neutron stars (NS). These and other authors have used EGRET data on NS to obtain stringent limits on LED. Fermi-LAT is observing radio pulsar positions obtained from radio and x-ray catalogs. NS with certain characteristics are unlikely emitter of gamma rays, and emit in radio and perhaps x-rays. This talk will focus on the blind analysis we plan to perform, which has been developed using the 1^{st} 2 months of all sky data and Monte Carlo simulations, to obtain limits on LED based on about 1 year of Fermi-LAT data. Preliminary limits from this analysis using these first 2 months of data will be also be discussed.

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