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First results on the high energy cosmic ray electron spectrum from Fermi-LAT ALEXANDER MOISEEV, CRESST/NASA GSFC and University of Maryland, FERMI/LAT COLLABORATION — The Large Area Telescope was launched in June 2008 onboard the Fermi mission and since August 2008 has been collecting routine science data. Fermi science topics cover practically all aspects of high-energy astrophysics, and among them is the measurement and interpretation of the high energy cosmic ray electron spectrum. Due to their low mass and rapid energy losses by the synchrotron radiation and inverse Compton effect, cosmic ray electrons provide unique information about the origin and propagation of cosmic rays in nearby Galactic space. An accurate measurement of their spectrum will also contribute to the understanding of astrophysical dark matter, because certain dark matter models predict features in the electron spectrum. It has been demonstrated that the LAT, being a high energy gamma-ray telescope, is also capable of detecting cosmic ray electrons with the effective geometric factor of ~ 2 m^{2}sr at 100 GeV. It has sufficient particle identification capability to reject hadrons to an adequate level, and collects unprecedented statistics of more than 10^7 electrons per year with energy above 20 GeV with good energy resolution of $<20\%$. In this work we present our first results on the measurement of the spectrum of high energy cosmic ray electrons from 20 GeV to around 1 TeV and discuss their interpretation.

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