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Modeling and Interpretation of High Energy Emission from GRBs Observed with the Fermi Gamma Ray Space Telescope SOEBUR RAZZAQUE[1], U.S. Naval Research Lab, FERMI COLLABORATION — Fermi Large Area Telescope (LAT) has detected high-energy emission (>100 MeV) from several Gamma Ray Bursts. LAT data show a delay in arrival time of >100 MeV emission as compared to keV–MeV emission detected by Fermi Gamma Ray Burst Monitor (GBM), a feature common to all these GRBs. The most detailed data yet of the high-energy emission came from the extremely fluent GRB 080916C. An analysis of the data for GRB 080916C with measured redshift is used to constrain the total energy, the bulk Lorentz factor of the jet, and the emission region size scale. Different possible mechanisms are examined in order to explain the delayed onset of the high-energy emission. The most stringent limit to date on the quantum gravity mass scale, derived from the GRB 080916C data, is also presented.

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