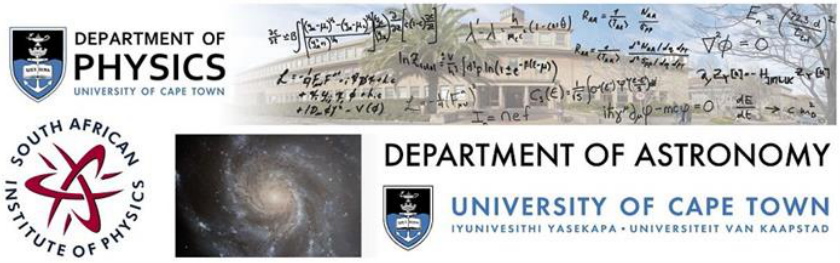

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Isotropic energy and luminosity correlations with spectral peak energy for five long GRBs

Wednesday, 6 July 2016 16:10 (1h 50m)

Abstract content
   (Max 300 words)
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We present a time-integrated spectral analysis of five long gamma-ray bursts (GRBs) with identified redshift triggered in 2015. Two bursts (GRB150403A & GRB150314A) are detected both by the Fermi Large Area Telescope (LAT) and Gamma-Ray Burst Monitor (GBM) while the other three sources (GRB150727A, GRB151027A & GRB150301B) are detected only by GBM. We describe the observable correlations of these bursts such as the intrinsic peak energy with the isotropic-radiated energy and luminosity in the source frame, to show their consistency with the global Amati/Yonetoku relation. We investigate the possibility that Band function, Power law, Smoothly broken power law and Comptonized components may be present separately by fitting the prompt emission spectra in the keV-MeV energy range. For the Fermi-LAT bursts, we consider also unbinned likelihood analysis using the preliminary Pass 8 new event-level reconstruction to characterize the models which at the end can have impact on the measured observables. Finally, we summarize that the intrinsic peak energy is highly correlated to the radiated isotropic energy (the Amati relation) and not as significantly correlated with the peak luminosity (the Yonetoku relation).

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