

Abstract Submitted
for the APR16 Meeting of
The American Physical Society

Composition of the jet in gamma-ray bursts from dissipative photosphere models PETER VERES, University of Alabama in Huntsville, PETER MESZAROS, Pennsylvania State University, MICHAEL BURGESS, Royal Institute of Technology, Stockholm, Sweden — We present a model for gamma-ray bursts where the usual non-thermal spectral peak at keV-MeV energies as routinely observed by Fermi GBM is ascribed to a dissipative photosphere. Thermal-like emission components, peaking at lower energies are also naturally incorporated in this model. We treat the initial acceleration of the jet in a general way, allowing for magnetic field- and baryon dominated outflows. In this model, the GeV emission associated with GRBs observed by Fermi LAT, arises as the interaction of photospheric radiation and the shocked electrons at the deceleration radius. Through recently discovered correlations between the thermal and non-thermal peaks within individual bursts, we are able to infer whether the jet was Poynting flux or baryon dominated.

Peter Veres
University of Alabama in Huntsville

Date submitted: 15 Jan 2016

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