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Spectral Analysis, and Hardness-ratios Correlations of SGR 1900+14 Bursts

Tuesday, 29 June 2010 16:30 (1 hour)

In the present study, we inspecte a refined sample of 117 bursts from SGR1900+14 observed with RXTE, PCA. We use 10 spectral-models, and the best fitting spectral-models has been found statistically to be the thermal bremsstrahlung and the power-law. Data are analyzed more by model-independent techniques. The global color-color diagrams are obtained with no distinguishable patterns as other objects like accretion disk neutron stars. Strong global correlations for burst timing and spectral properties with hardness-ratios has been found, and the most interesting ones are those between total hardness-ratios (soft/hard) and the bursts' total counts. That is, the hardness-ratio decreases; in the mean; with the burst-total-counts (more photons = softer spectrum.) Also this result is confirmed by the strong correlations obtained between bursts' total-counts and both hot-zone temperature (kT) and photon index (⊠). Classification of bursts depending on the burst-duration and the total photons-contained will be taken into consideration in our future studies of bursts.

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