Spectral and temporal properties of long GRBs detected by INTEGRAL from 3 keV to 8 MeV

Since its launch in 2002, INTEGRAL has triggered on more than 78 γ-ray bursts in the 20-200 keV energy range with the IBIS/ISGRI instrument. Almost 30% of these bursts occurred within the fully coded field of view of the JEM-X detector (5) which operates in the 3-35 keV energy range. A detailed study of the spectral and temporal evolution of a subset of 7 INTEGRAL γ-ray bursts across a wide energy range from 3 keV to 8 MeV has been carried out. This GRB sample is characterised by long multi-peaked bursts that are bright in the JEM-X energy range and encompass X-ray rich bursts, X-ray flashes and classical GRBs. We report the detection of X-ray prompt and afterglow emission from GRB 041219A and GRB081003A with JEM-X for the first time. At least two temporal breaks have been identified in the X-ray afterglow light curve of GRB 081003A. These results demonstrate INTEGRAL’s broadband capabilities for the study of the transition from X-ray prompt to afterglow emission in γ-ray bursts.