

Associated programs

Introduction

The **HEAsoft** package provides a number of programs and subroutine libraries to manipulate the FITS files used by XSPEC. A description of most tasks can be obtained by typing help taskname or to get a complete list fhelptools.

HEAsoft reading tasks

- FTLIST** Prints the contents of a FITS file to the screen or to a file.
- DMPRMF** Prints the contents of a FITS RMF file to the screen or to a file. This tool prints the RMF file in a more legible fashion than FTLIST.

HEAsoft manipulation tasks

- FPARKEY** Changes the value of a keyword in a FITS extension header.
- GRPPHA** Defines (or redefines) and/or displays the grouping and quality flags, the important keywords, and the fractional systematic errors.
- RBNPHA** Compresses a FITS PHA file to a user-defined number of channels. The output is a new file containing the revised PHA extension plus a direct copy of any other extensions in the original file.
- MATHPHA** Performs arithmetical operations on PHA files.
- CMPPHA** Convert a type II pha file to a type I pha file.
- RBNMF** Bins a FITS RMF file (the detector response matrix) in channel or energy space.
- CMPRMF** Compress an RMF by removing all response below a threshold value.
- ADDARF** Adds together ARFs.
- ADDRMF** Adds together RMFs.
- MARFRMF** Multiplies an RMF file by an ARF file.
- GENRSP** A generic spectral response generator.

HEAsoft subroutines

The directory `ftools/callib/src/gen` in the HEAsoft distribution contains a number of subroutines for reading and writing the extensions in FITS format spectral and response files. More information on their use can be obtained from the xspec website at:

<http://heasarc.gsfc.nasa.gov/docs/xanadu/xspec/fits/fitsfiles.html>

RDPHA2	Read a spectrum extension
WTPHA3	Write a spectrum extension
RDRMF5	Read the matrix extension
WTRMF5	Write the matrix extension
RDEBD4	Read the channel boundaries extension
WTEBD4	Write the channel boundaries extension
RDARF1	Read the effective area extension
WTARF1	Write the effective area extension