

response: change the detector response for a spectrum

Modify one or more of the matrices used to describe the response(s) of the associated spectrum to incident X-rays.

Syntax: **response** [<filespec>...]
 response [<source num>:]<spectrum num> none

where

<filespec> =:: [[<source num>:]<spectrum num>] <file name>...,

and <file name> is the name of the response file to be used for the response of the associated spectrum. If <file name> ends in a {n} specifier then the nth response will be read from the file. <spectrum num> is the spectrum number for the first file name in the specification, and follows similar rules as described in the **data** command description. An important difference however is that the response command may only be used to modify the response of a previously loaded spectrum: an error message is printed if the <spectrum num> is greater than the current number of spectra (as determined from the last use of the **data** command).

An optional <source num> may be specified to attach additional responses to a spectrum, and should be paired with <spectrum num> separated by a ':'. This allows the user to assign multiple models, each with their own response file, to a particular spectrum. See the **model** command for more information. If no <source num> is specified, it always defaults to 1. Source numbers do not need to be assigned consecutively to a spectrum, and gaps in numbering are allowed. The additional response may be removed with a **response** <source num>:<spectrum num> none command. Both the **show data** and **show response** commands will display current information regarding the response(s) to spectrum assignments.

A file name none indicates that no response is to be used for that spectrum. This situation means that any incident spectrum will produce no counts for those particular channels. If a file is not found or cannot be opened for input, then the user is prompted for a replacement response file. An <EOF> at this point is equivalent to using none as the response. See the **data** command for ways to totally remove the spectrum from consideration. The user is also prompted for a replacement if the response file has a different number of PHA channels than the associated spectrum. A warning will be printed out if the response detector ID is different from the associated spectrum's. The current ignore status for channels is not affected by the command. (See the **ignore** and **notice** commands).

Examples:

It is assumed that there are currently three spectra:

Single source usage:

XSPEC12> response a,b,c	// New files for the response are given for all three files.
XSPEC12> response 2 none	// No response will be used for the second file.
XSPEC12> response ,d{2}	// The second response in d becomes the response for
	//the second file.

Multiple source usage:

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XSPEC12> response 2:1 e           // A second source with response e.pha is now added to
                                     // the first spectrum. A second model can be assigned
                                     // to this source.

XSPEC12> response 2:2 f 3:2 g      // A second and third source is assigned to spectrum 2.

XSPEC12> response 2:2 none         // The second source is now removed from spectrum 2.
```