NAME
scatfile_convert − converts binary format scattering distributions to FITS format

SYNOPSIS
scatfile_convert [OPTIONS]

DESCRIPTION
For each line the *scatter_db*, **scatfile_convert** converts the binary format scattering distribution to a FITS file. Each scattering distribution file is placed in a single FITS binary table.

The *hdosxform_db* and *mirror_db* are used to determine the zone geometry in the body center coordinates.

OPTIONS
The following options are supported:

hdosxformdb
> RDB database mirror dimensions. See FILES.

mirrordb
> RDB database of mirror positions. See FILES.

scatterdb
> RDB database of zone positions and scattering distribution files. See FILES.

outputdir
> Directory into which the output files are written. The output files will be named after the binary scat_files in the *scatter_db*.

help
> Print brief usage information and exit.

usage
> Print usage information and exit.

version
> Print version information and exit.

EXAMPLE
```
scatfile_convert                                                      \
  --hdosxformdb /proj/axaf/simul/databases/mirror/hdos_xform.rdb  \
  --mirrordb /proj/axaf/simul/databases/mirror/EKCHDOS06.rdb       \
  --scatterdb /proj/axaf/simul/databases/scatter/HDOS_980623a.rdb \
  --outputdir ./HDOS/980623a/tables
```

FILES
HDOS Transform Database

The HDOS transform database must contain the mirror name, mirror end cut position, and mirror length in the *mirror*, *Z_ec*, and *L* columns respectively.

Mirror Database

The mirror database must contain the mirror name and Z position of the body center of the optic in the *mirror* and *z0* columns respectively.

Scatter Database

The scatter database must contain the mirror name, Z position of the zone minimum, Z position of the zone maximum, and the binary format scattering distribution file in the *mirror*, *zmin*, *zmax*, and *scat_file* columns respectively.

Scattering Distribution Files

These files are assumed to be binary format files with the following structure:

integer
> an integer representing the number of elements in the scattering distribution(ndist).

float
> a float representing energy times sine of the graze angle(esa).

float
> a float representing the minimum probability in the scattering distribution(p0).

float
> a float representing the distance between probabilties in the scattering distribution(pdelta).

float
> a float representing the maximum probability in the scattering distribution(ptop).

float
> a float representing the normalization factor for the value being raise to a power(normtop).

float
> a float representing the power to which the normalized(normtop) value is raised(powtop).

float
> a number(ndist) of floats representing the scattering distribution (pdist).

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VERSION

This documents version @VERSION@ of **scatfile_convert**.

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