

phitar

Jupyter Notebooks

Related to phitar v1.04

- [phitar: Testing of the e-type = 2 source subsection](#)
- [phitar: Testing of the e-type = 22 source subsection](#)
- [phitar: Energy bin synchronization between tallies and cross sections](#)

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NAME

phitar - A PHITS wrapper for targetry design

SYNOPSIS

```
perl phitar.pl [run_mode] [--rpt_subdir=dname] [--rpt_fmts=ext ...]
               [--rpt_flag=str] [--nopause]
```

DESCRIPTION

phitar is a PHITS wrapper written in Perl, intended for the design of bremsstrahlung converters and Mo targets. phitar can:

- examine ranges of source and geometric parameters

- according to user specifications
- **generate** ANSYS MAPDL **table and** macro files
- collect information from PHITS tally outputs **and generate** report files
- collect information from PHITS general outputs **and generate** report files
- modify ANGEL inputs **and** outputs
- calculate yields **and** specific yields of Mo-99 **and** Au-196
- convert ANGEL-generated **.eps** files to various image formats
- **generate** animations using the converted rasters

OPTIONS

```
run_mode
  file
    Input file specifying simulation conditions.
    Refer to 'args.phi' for the syntax.
  -d
    Run simulations with the default settings.
  --dump_src=<particle>
    electron
    photon
    neutron
    Run simulations using a dump source.
    (as of v1.03, particles entering a Mo target are used
    as the dump source)

--rpt_subdir=dname (short: --subdir, default: reports)
  Name of subdirectory to which report files will be stored.

--rpt_fmts=ext ... (short: --fmts, default: dat,xlsx)
  Output file formats. Multiple formats are separated by the comma (,).
  all
    All of the following ext's.
  dat
    Plain text
  tex
    LaTeX tabular environment
  csv
    comma-separated value
  xlsx
    Microsoft Excel 2007
  json
    JavaScript Object Notation
  yaml
    YAML

--rpt_flag=str (short: -flag)
  The input str followed by an underscore is appended to
  the names of the following files:
  - maximum total fluences
  - cputimes
  Use this option when different materials are simulated
  in the same batch to prevent unintended overwriting.

--nopause
  The shell will not be paused at the end of the program.
  Use it for a batch run.
```

EXAMPLES

```
perl phitar.pl args.phi
perl phitar.pl -d
```

```
perl phitar.pl --dump=electron --rpt_flag=elec_dmp args.phi
perl phitar.pl args.phi > phitar.log -nopause
perl phitar.pl --rpt_flag=au args.phi
perl phitar.pl --rpt_flag=moo3 args_moo3.phi
```

REQUIREMENTS

```
Perl 5
Moose, namespace::autoclean
Text::CSV, Excel::Writer::XLSX, JSON, YAML
PHITS, Ghostscript, Inkscape, ImageMagick, FFmpeg, gnuplot
(optional) ANSYS MAPDL
```

SEE ALSO

[phitar on GitHub](#)

phitar in a paper: *Nucl. Instrum. Methods Phys. Res. A* **987** (2021) 164815

Utilities

- [excel2etype22](#) - Convert EXCEL-stored energy distribution data to PHITS e-type = 22 data
- [xsconv](#) - Convert the units of cross section variables
- [xsaug](#) - Augment cross section data
- [joinyld](#) - Join phitar yield files
- [yld2datagen](#) - Convert phitar yield files to a datagen input file

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