online version: https://github.com/czylabsonasa/jozso (https://github.com/czylabsonasa/jozso)

READ.ME

JOZSO: a program for calculating broad neutron resonances

Prerequisites:

- GNU gfortran compiler and GNU make
- *optionally* GNU octave

These are fairly standard packages/programs available on all major Linux distribitions.

Installation

- simply extract the supplied zip file to a desired location

Directory structure

```
JOZSO
├── dat
│   └── extformf.dat
├── log
├── obj
├── res
│   ├── maprajz.m
│   └── trajz.m
├── src
│   ├── jozso.f90
│   └── odeint.f90 !note that, it is not shipped with JOZSO
├── cgws.config
├── dev.config
├── ext.config
├── makefile
├── sahu.config
└── user.config
```

Short description of files

- the file **dat/extformf.dat** consists the values used for defining an external potential to be read in
- the **log** directory is for log files created by **jozso**
- the **obj** directory is used to store the **.mod** files created by the compiler
- **jozso** will place all the output files into directory **res**
  - you also find here two small octave scripts, which can be used to quickly generate plots from the results:
    - in the directory **res** the command 'octave -f maprajz.m' will result the file 'map.eps' (after a mode=1 run)
    - in the directory **res** the command 'octave -f trajz.m' will result the file 'ktraj.eps' (after a mode=2 run)
- **src**: source code of the main program. You should place here a copy of odeint from *Numerical Recipes*.
- the **makefile** controls the compilation

Config files

According to the used potential type, the program's behaviour can be controlled through the following config files:

- cgws.conf: for parameters controlling Wood-Saxon type potential
- sahu.conf: for parameters controlling Sahu-Sahu type potential
- ext.conf: for parameters controlling the external potential option

A comprehesive description of the parameters used can be found in the chapter 3 of http://arxiv.org/abs/1711.04619 (http://arxiv.org/abs/1711.04619)

- user.conf
  - here you can change the default names of data,result,log and config files
- dev.conf
  - internal constant used during the development: do not change it

Compiling

In the *JOZSO* directory issue the following commands:

```
make clean; make
```

You should not get any errors (warnings are possible, due to different gfortran configurations).

Executing

In the **JOZSO** directory issue:

```
./jozso
```

optional parameter can be passed to the program:

- **-h** for getting a short help message
- **-1** *or* **-cgws** for chosing Wood-Saxon potential, it is the **default** potential option
- **-2** *or* **-sahu** for Sahu-Sahu type potential
- **-4** *or* **-ext** for external potential option

Troubleshooting

If you are encountering problems, bugs, etc. please contact:
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