Jlab Simulation Package for Electron Cooling

About JSPEC

JSPEC is an open source C++ package for numerical simulations on the electron cooling process, including the intrabeam scattering (IBS) effect, developed at Jefferson Lab (JLab).

How to compile

Compile using code blocks IDE

JSPEC is developed using the code blocks IDE. If you are using the same IDE, just open the project file "jspec.cbp" in the cbp folder and build it. Make sure you have a c++ compiler that supports C++11 standard.

Compile using cmake

Users can also use cmake to compile the files (tested in Ubuntu 16.06). In the project folder, run the following commands:

```
cd build

cmake ..

make
```

How to run

To run JSPEC, you can put your input file in the same folder with the JSPEC executable file and run the following commands in the folder:

```
jspec.exe inputfilename
```

You also need another file in *MAD X* tfs format, which defines the ion ring optics. You can put it in the same folder too. About how to write your input file, please refer to the JSPEC User Manual.

Besides running the program in the command line as aforementioned, a windows batch file "jspec-dragfile.bat" is also provided. Putting this bat file together with the executable jspec file "jspec.exe", the math parser dynamic library file "muparser.dll", the tfs format lattice file and the input script file in the same folder, one can drag the input script file onto the batch file to run the computation/simulation.

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