User Maual of FFTK

Typical Compilation:

```
cd fftk/trunk
CXX=mpicxx cmake . -DCMAKE_INSTALL_PREFIX=$HOME/local
make install
```

CMake supports the following options

- `-DREAL=FLOAT` – It will treats Real as FLOAT
  Default: DOUBLE
- `-DFIND_LIBRARIES=OFF` – It will not try fo find Blitz++ and FFTW library
  Default: On
- `-DENABLE_THREAD=TRUE` – Enable OpenMP threads for computing local FFT
  Default: FALSE
- `-DFFTW_PLAN=PATIENT` - It can be one of ESTIMATE, MEASURE, PATIENT, EXHAUSTIVE
  Default: PATIENT

Using FFTK

mpirun -np 4 ./test_fftk basis sincos_option Nx Ny Nz iter [rows]
e.g.
mpirun -np 4 ./test_fftk SSS SCC 32 32 32 10 2

```
Argument     - Description
basis        - One of FFF, SFF, SSF, SSS.
               Here F reprasents Fourier Transform, and
               S represents Sinusoidal Transform


basis_option – It says whether Sicusoidal is Sin or Cos
               For basis = FFF, it can only be FFF.
               For basis = SFF, it can be SFF or CFF.
               For basis = SSF, it can be SSF, SCF, CSF, CCF.
               For basis = SSS, it can be SSS, SSC, SCS, SCC, ... .

Nx, Ny, Nz   - The grid size. For 2D use Ny = 1

iter         - Number of pair of transforms to perform

rows         - Number of Rows in a pencil division.
               Default:
                 rows = 1 if numprocs < Nx
                 rows = numprocs / Nx is numprocs>Nx

For pencil division this assertion must hold:
(Nx%cols == 0) and (Ny%cols == 0) and (Ny%rows == 0) and (Nz%rows == 0)

where cols = numprocs/rows.
```