

Idealized Inputs

Idealized TIEGCM Inputs

Certain indices (3-hour KP and daily F10.7) are read from the GPI_NCFILE with POTENTIAL_MODEL= 'HEELIS' (the only potential model we've tested with CMIT). TIEGCM can be run with constant values for these parameters or run off the time varying data in the GPI file. See the [TIEGCM documentation](#) for additional details on the relevant variables.

By default, CMIT derives values for KP, POWER, CTPOTEN, F107 and F107a from this GPI file. If you'd like to fix only F10.7 (but not KP), there are two ways to proceed.



Note

[Make It So](#) doesn't do any error checking on the relationship between GPI_NCFILE and KP, POWER, CTPOTEN, F107, F107A. If you enable every one of these variables, the TIEGCM may do unpredictable things or fail entirely.

Option 1: Run MakeltSo Interactively

When running [Make It So](#) interactively: Constant F10.7 is an "expert" parameter. Run "makeItSo.config --expert". Once you get to the TIEGCM settings, you will be prompted something like:

```
Required "POTENTIAL" variables (? for help):
-----
POTENTIAL_MODEL ( HEELIS ):
GPI_NCFILE ( $TGCMData/gpi_2000001-2009031.nc ):
Enable "KP"? ( n ):
Enable "POWER"? ( n ):
Enable "CTPOTEN"? ( n ):
Enable "F107"? ( n ): y
F107 ( 100.0 ):
Enable "F107A"? ( n ): y
F107A ( 100.0 ):
```

Notice that by default, the GPI file is enabled, but KP, POWER, CTPOTEN, F107, F107A are disabled. type "y" or "yes" to enable F107. Then set the value you wish to use. Note: If you fix both KP and F107, you should probably disable GPI_NCFILE (press "CTRL+C" when prompted for GPI_NCFILE).

Option 2: Run MakeltSo from a config file

When running [Make It So](#) from a "config" file: Modify a MakeltSo.config file. Look for the "TIEGCM" parameters and just add F107 and F107A. This will enable these variables & use the constants you specify:

```
POTENTIAL:
- POTENTIAL_MODEL: HEELIS
- GPI_NCFILE: $TGCMData/gpi_2000001-2009031.nc
- F107: 100.0
- F107A: 100.0
```

If you fix all the related variables (KP, POWER, CTPOTEN, F107, F107A), you need to disable "GPI_NCFILE".

```
POTENTIAL:
- POTENTIAL_MODEL: HEELIS
- GPI_NCFILE:
  status: disabled
  value: $TGCMData/gpi_2000001-2009031.nc
- KP: 4.0
- POWER: 6.0
- CTPOTEN: 20.0
- F107: 100.0
- F107A: 100.0
```