The simulation code consists of four separated files. These file are described as follows:

1. AP\_GC\_fun.py

This file includes the reflection mechanism inside the receiver unit of PTC

2. fun2.py

This file includes the view factors between the receiver unit components as well as the concentrated solar flux distribution at the absorber pipe and outer cover of the receiver unit.

Note: The concentrated solar flux is a list. The length of the list is 100 and 200 for absorber pipe and outer cover, respectively. It is changeable according to the system requirements.

3. input.py

This file includes all the system physical and sizing parameters.

4. start\_w\_fixed\_iteration.py

The file includes the core calculations of the system. Please, specify the following inputs before you start:

* the number of the unit length of the receiver unit using “num\_unit\_length”
* “Iteration” is selected to be 300 for high accuracy. You may check the convergence of this parameters to reduce the time of calculations.
* “Excel\_file\_name” is the name of the excel file for the results.

To run the sim, start by opening the file “start\_w\_fixed\_iteration.py” and write the code “starter()” in the console.