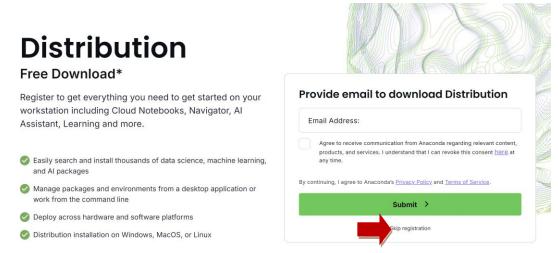
For day 2 and 3, you need to install Python 3.12, python packages parsac, pp and SALib to use parsac (for auto-calibration and sensitivity analysis).

We recommend using Python3 via Anaconda distribution:

- 1. Click here Anaconda distribution
- 2. Optional if you will register for Anaconda (else click "skip registration")



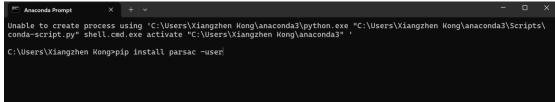
3. Download and install Anaconda with Python 3.12



Once Anaconda is installed, open an Anaconda prompt window and type "pip install parsac

-user". Python will now download and install parsac (you need internet connection for this).





Notes:

- Remove "—user" to install in the system's shared Python directory (not recommended).
- Some systems have multiple versions of pip, e.g., pip for Python 2, pip3 for Python 3.
 Make sure you use the command that corresponds to the Python version you want to install into.

How do you know parsac is successfully installed?

In the Anaconda prompt, type "parsac -h", if you see the screen below, then it is installed!

```
Unable to create process using 'C:\Users\Xiangzhen Kong\anaconda3\python.exe "C:\Users\Xiangzhen Kong\anaconda3\Scripts\conda-script.py" shell.cmd.exe activate "C:\Users\Xiangzhen Kong\anaconda3" '

C:\Users\Xiangzhen Kong>parsac -h
usage: parsac [-h] [-v] {sensitivity, calibration, ensemble, service} ...

parsac - Parallel Sensitivity Analysis and Calibration

positional arguments:
{sensitivity, calibration, ensemble, service}
sensitivity Sensitivity analysis
calibration Auto calibration
ensemble Ensemble simulation
service Service information

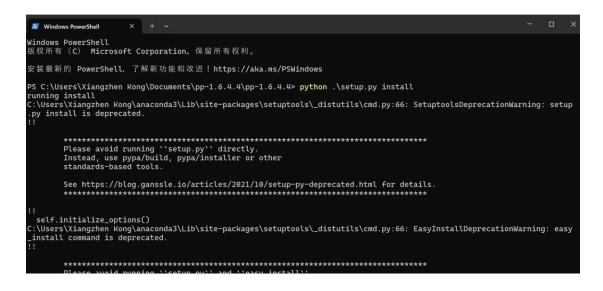
options:
-h, --help show this help message and exit
-v, --version show program's version number and exit

C:\Users\Xiangzhen Kong>
```

How to install Parallel Python (多线程):

parsac supports parallel simulations through <u>Parallel Python</u>. This package supports Python 2 out of the box (pip install pp --user), but its Python 3 version is currently in beta. To install pp in Python 3, either <u>download the zip file with the Python 3 port of Parallel Python</u> or use the pp version provided on the USB stick today ("pp-1.6.4.4.zip"):

- 1. Extract contents of pp-1.6.4.4.zip,
- 2. Open a command prompt there and navigate the folder with extracted pp-1.6.4.4 directory
- 3. Execute command run "python setup.py install".



How to install SALib for sensitivity analysis (灵敏度分析):

parsac uses SALib for sensitivity analysis.

Typically, this can be installed with **pip install SALib --user**.

If you are using the Anaconda Python distribution, you can instead do "conda install SALib" (you may need to add "-c conda-forge").