

# EM-GUI Guidance

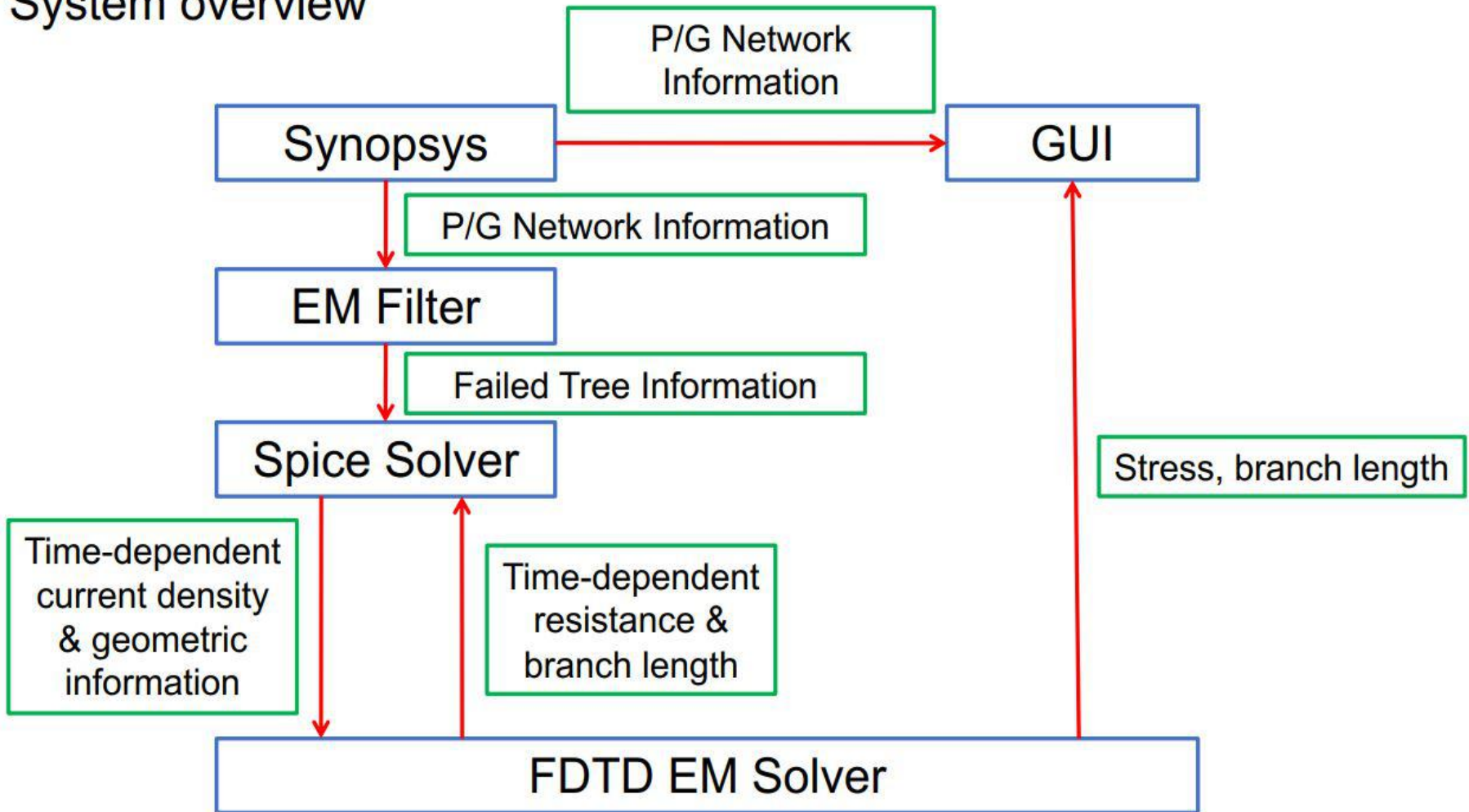
Yibo Liu

# Content

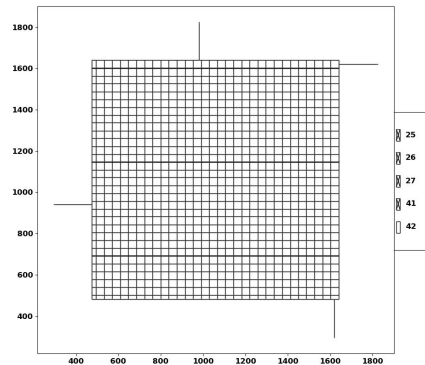
1. Introduction
2. Developing Environment
3. Folders and data of EM-GUI
4. Files and Folder
5. How to run the code

# 1. Introduction

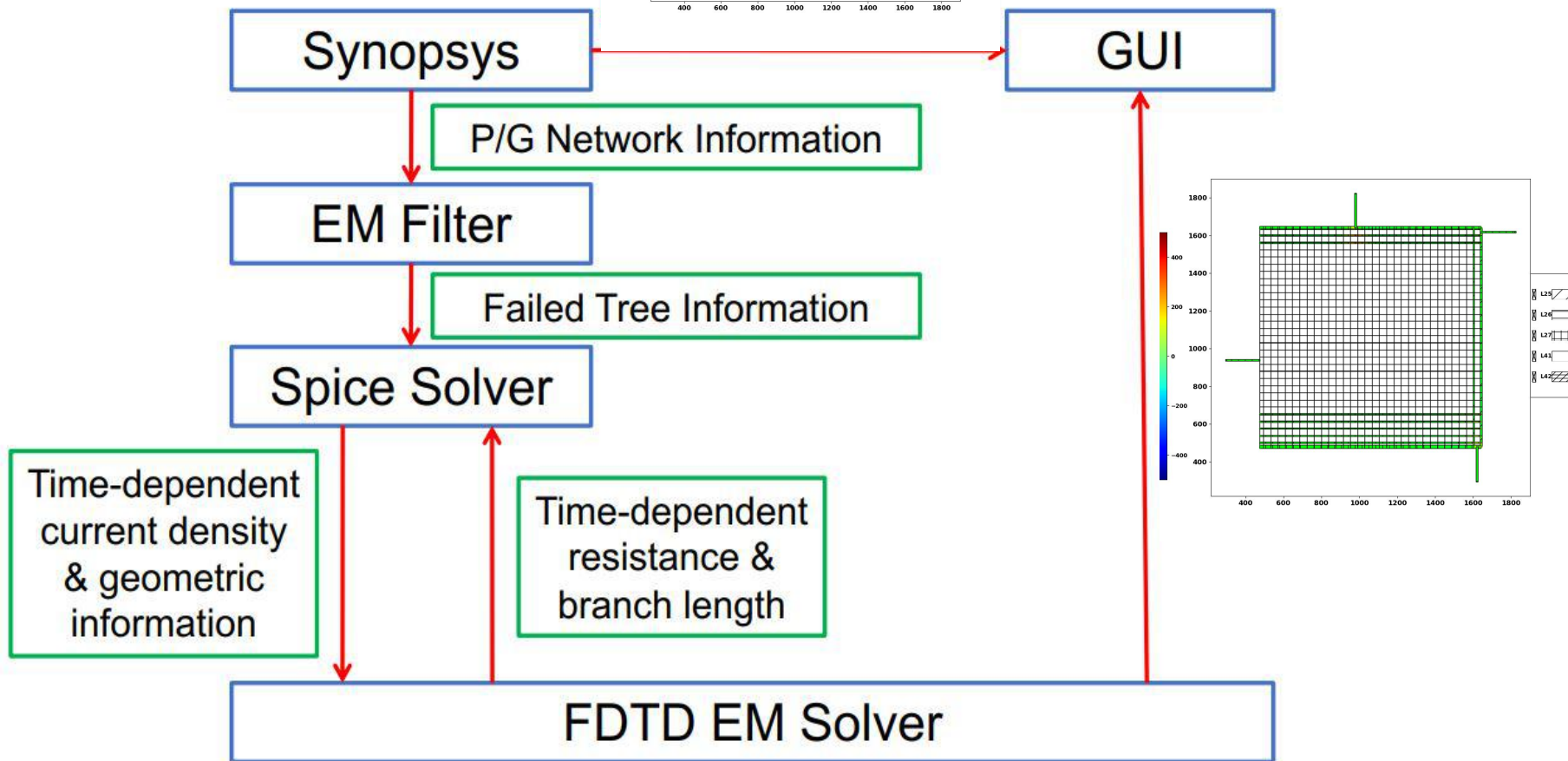
## System overview



# 1. Int



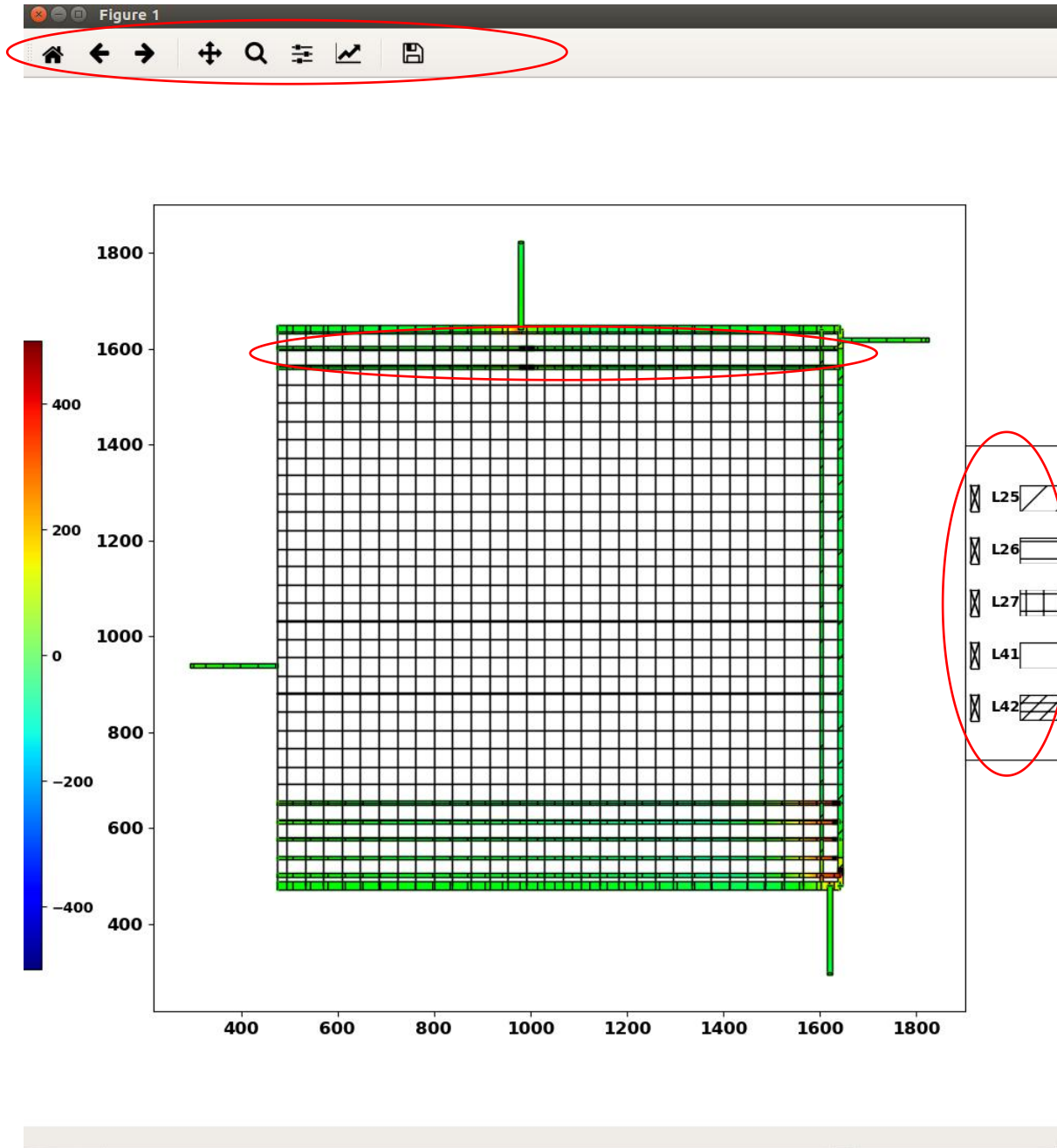
## System overview



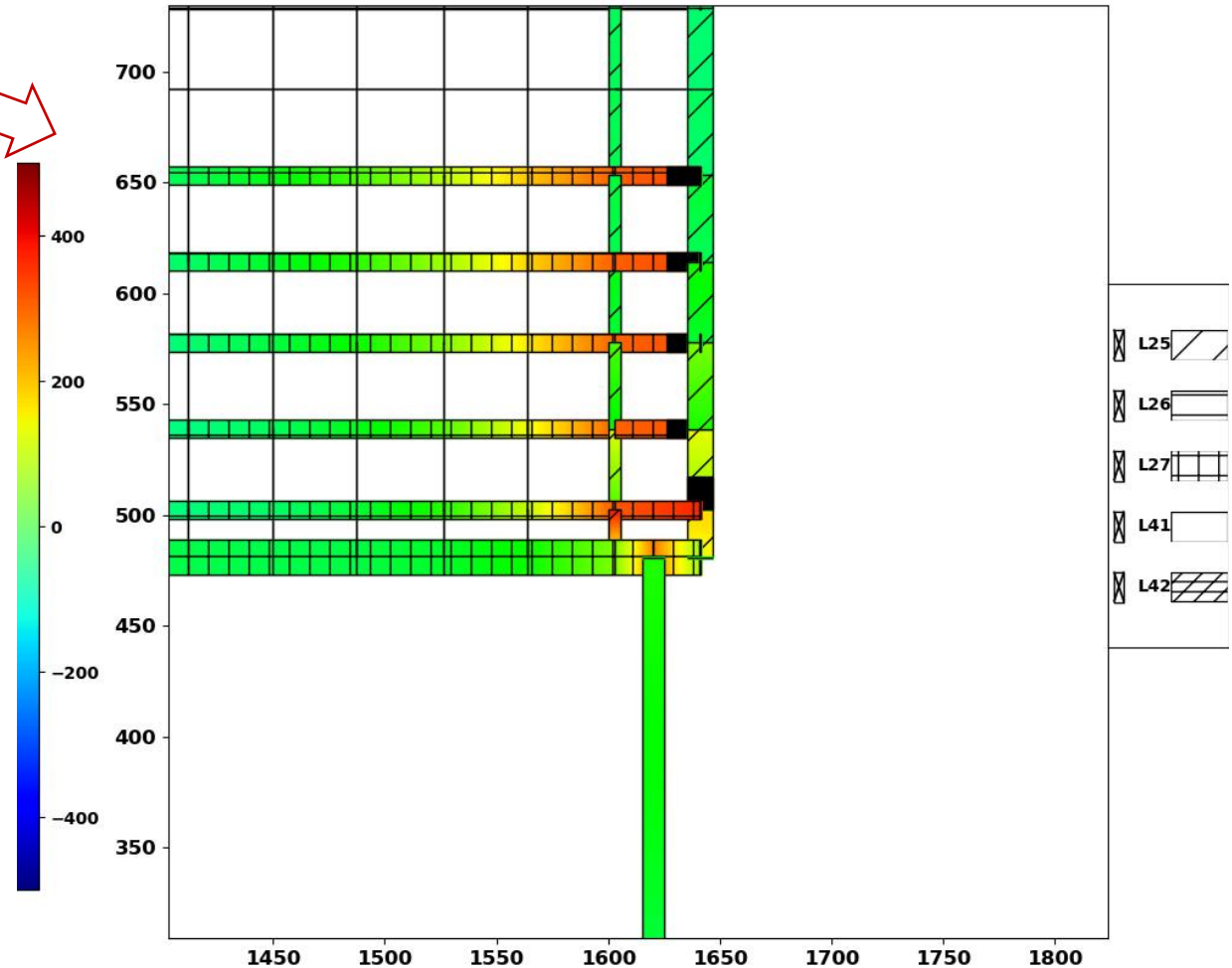
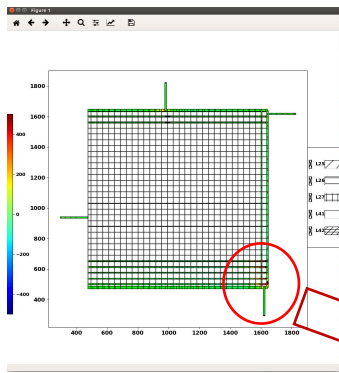
## 2. Developing Environment

- The EM-GUI tool is developed on Python3, mainly with python packages 'Matplotlib' and 'Ipython'
- Development IDE: Spyder.
- Operating System: Ubuntu16.04 64bits
- Detailed environment package list is in the 'EM-GUI.yml' file.

# 3. User Interface



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- Layer selection button panel with patterns.

- Keyboard function: shift ← ↑ ↓ →

- Keyboard function: Back to center    Ctrl+C

- Mouse scroll: Zoom-in/Zoom-out



# 4. Files and Folder

- **4.1 Files**

There are two types of files under the root folder: parser files and several function files.

The parser files scan the original output information(such as the 'armcore.sp' ) and re-organize the power grid data

parser1(powergrid).py: Parse the powergrid information from 'CORTEXM0DS\_pads.VDD.pw\_hl.pna' file.

parser2(armcore).py: Parse the geometric information from 'armcore.sp'.

parser3(stress).py: Parse the stress from 'u\_stress\_xx.txt'.

parser4(curden).py: Parse the current density from 'u\_curden\_xx.txt'.

parser5(void): Parse the void from 'u\_void\_xx.txt'.

parser6(voltage).py: Parse the voltage from 'tree\_node\_voltage\_xx.txt'

# 4. Files and Folder

- **4.1 Files**

There are two types of files under the root folder: parser files and several function files.

Each main.py file has its corresponding functions:

main1.py: Plot void.

main2.py: Plot stress.

main3.py: Plot current density.

main4.py: Plot stress+void.

main5.py: Plot current\_density+void.

main6.py: Plot stress+colorbar.

main7.py: Plot current\_density+colorbar.

main8.py: Plot stress+void+colorbar.

# 4. Files and Folder

- **4.2 Folders**

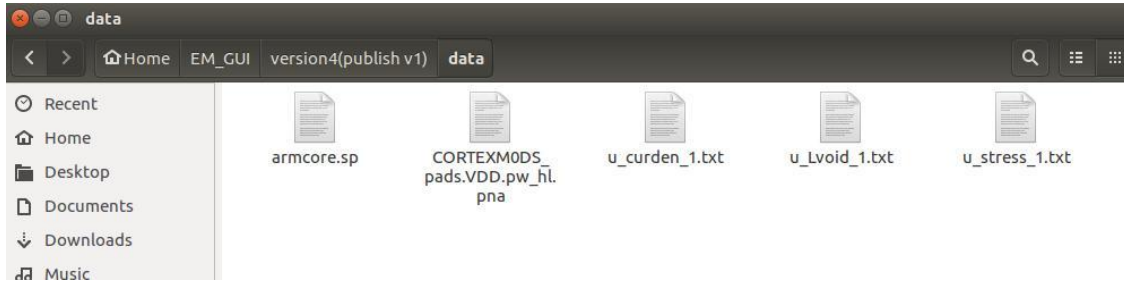
There are two folders: '/data' and '/temp2'.

'/data' folder contains the original power grid data comes from the system.

'/temp2' folder contains the temporary files generated by EM-GUI

# 5. How to run the code

- Step 1. Put all data files in to folder '/data'



- Step 2. Change the file path inside the parser. Run parser files.

```
1 #!/usr/bin/env python3
2 # -*- coding: utf-8 -*-
3 #path need to be added later!
4 #path='/home/yibo/EM GUI tool/raw_output.txt'
5
6 file1=open('data/CORTEXM0DS_pads.VDD.pw_hl.pna',encoding='utf-8')
7 file2=open('temp2/output.txt','w',encoding='utf-8')
8
9 #line=file1.readline()
10 count=0
```

- Step 3. Use Ipython to run the main.py file.