Inputs

Device.fsp

n Sweep variables $\{l_1, \dots, l_n\}$

Params file: Misc. info

Data desired to extract

Outputs (deprecated)

$|E|: x_i \times y_i \times h_i$

$|S|: x_i \times y_i \times h_i$

$T: h_i$

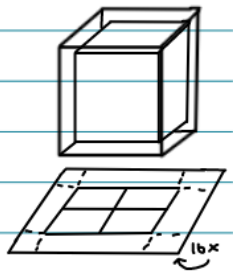
} $\times$ Size $l_1 \times \cdots \times l_n$

Step 1

Monitor Setup (some are unnecessary during optimization)

- check if monitors already exist
  - ↳ if not, create

Other environs setup: Repeat



Step 2

Import sweep params

Check layout mode

Adjust simulation accordingly

Add to job queue

* Run, save .fsp files

backup and loading code →

Step 3

Access each finished simulation

Extract data: what is needed?

- $|E|$, $|S|$, T across each monitor
- can customise accordingly

Save data: what is needed?

- can customise accordingly

Use a JSON:

```
{ "Monitors" : [
    { "id" : 0 , "name" : 'side_monitor-0',
      "type" : 'point'|'2D'|'3D',
      "normal" : None|'x'|'y'|'z',
      "getFromFDTD" : True ,
      "save" : True }
  ]}
```

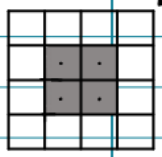
Step 3.5 – Plot Gathering

Create array to hold data for each finished simulation

- length = # plot types

For each finished simulation:

- Sorting spectrum
- E-norm images at each spot
- Gather data for sweep plots
  - → Sorting efficiency
  - → Functions of:
    - Transmission (6 sides) (duplicate)
    - $|S|$ (6 sides + spill_plane)
    - $|E|$ (6 sides + spill_plane)



→ Cross-reference x,y,z arrays from getResult to identify quadrants and focal spots.

- These are either 1×1 or $1 \times h_i$ vectors.

Export out

```
{"r":[{"var_name": "x_pos", "var_values": [arr r1]}
      {"var_name": "y_pos", "var_values": [arr r2]}]
 "f":[{"var_name": "Red eff.", "var_values": [arr f1]},
      {"var_name": "G1 eff.", "var_values": [arr f2]}],
 "const_params": {dictionary}
 "title": "blah"}
```

Step 4

Plot remaining functions

Export as per format above

Output

Datafiles for each plot

- JSONs in the format given above.
- [Future]: HDF5??