

# C\_Fastscan v0.1

How to automate oneself out of a job

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# C\_Fastscan

An accessible reimaging of Fastscan/emcalc (eventually)

## Goals:

- Understandable → Maintainable
- Modular → Expandable

**Class Methods & Properties are defined by the measurement:**

Properties

Solmin  
Solmax  
Solstep  
nFrames

...

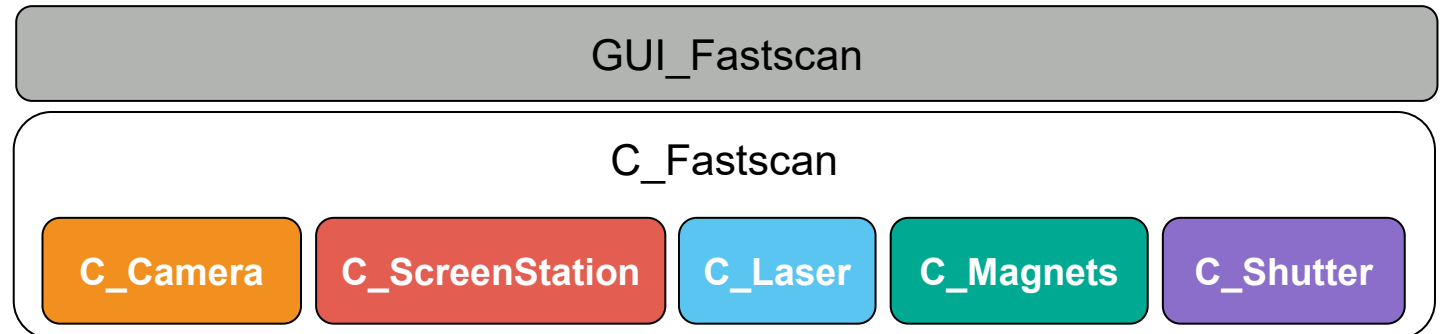
End

- C\_Fastscan.GetSpotScan
  - C\_Fastscan.GetSpot

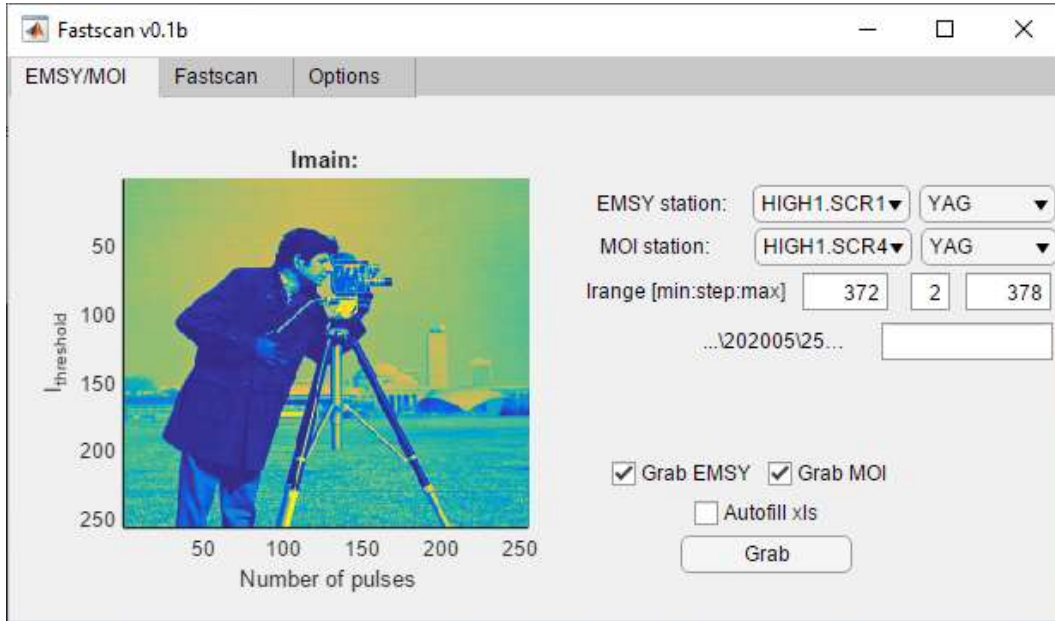
## C\_Fastscan

### 'Supervisor/director' class

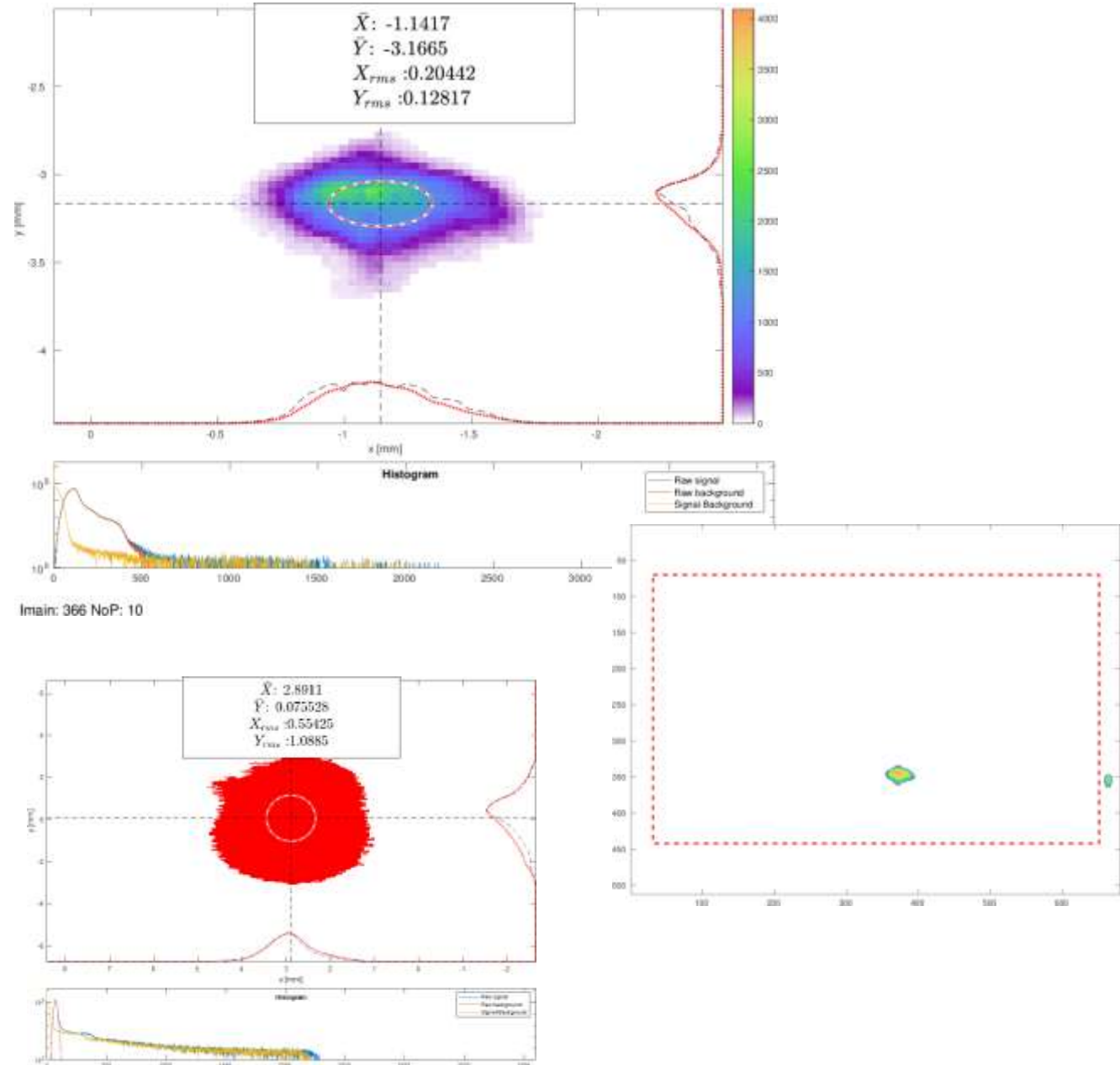
- Stand-alone supervisor class encompassing others
- GUI layer on top
  
- Assumes cameras already connected
- Currently: Grab spots functionality only



# C\_Fastscan

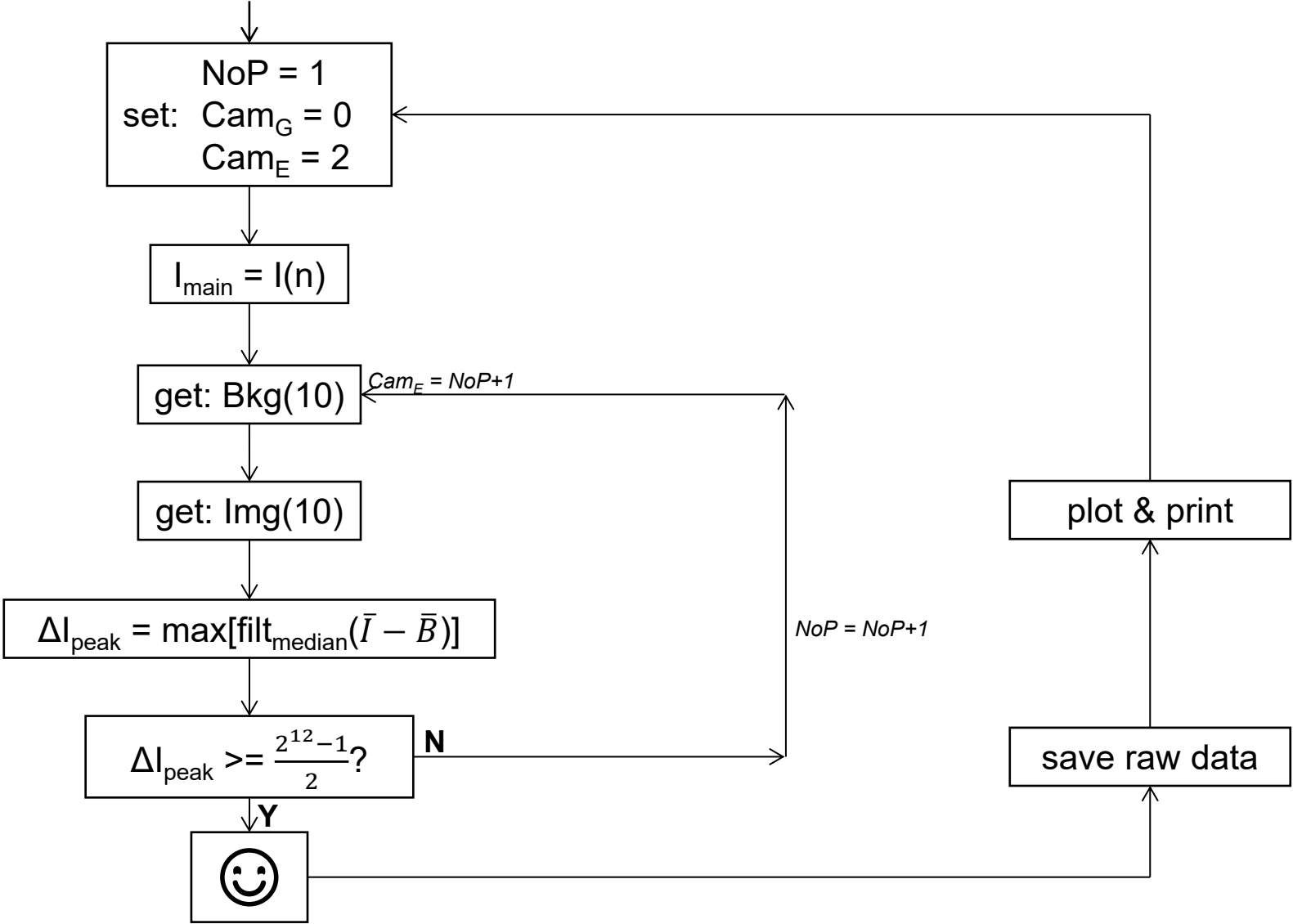


- Grabs EMSY/MOI spots
- Auto-ramps pulse no.:  $SND_{peak} \geq 2048$
- 11 MOI spots in ~4min
- Impose all spots in summary image
- Saves raw data for emcalc/MOI



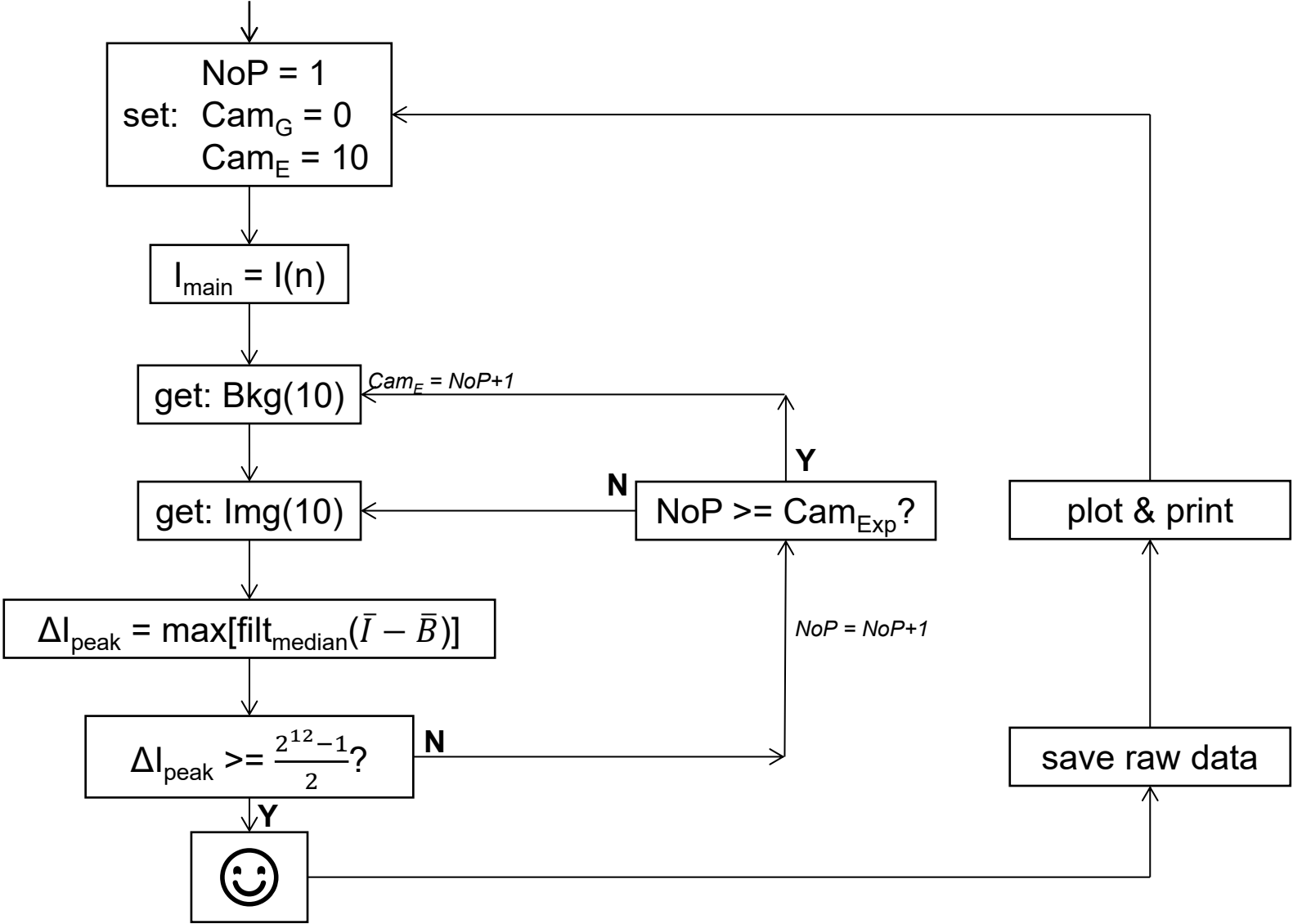
# GetEMSY/MOI Logic Flow (1)

In a (relatively) simple world



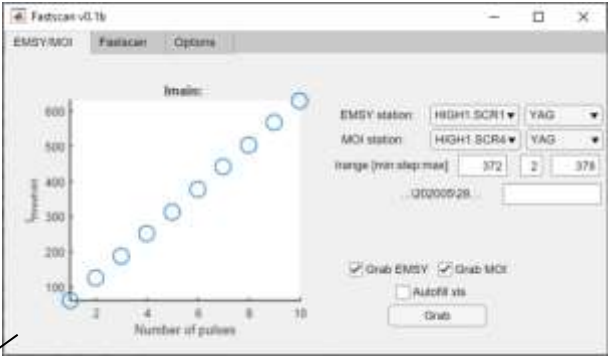
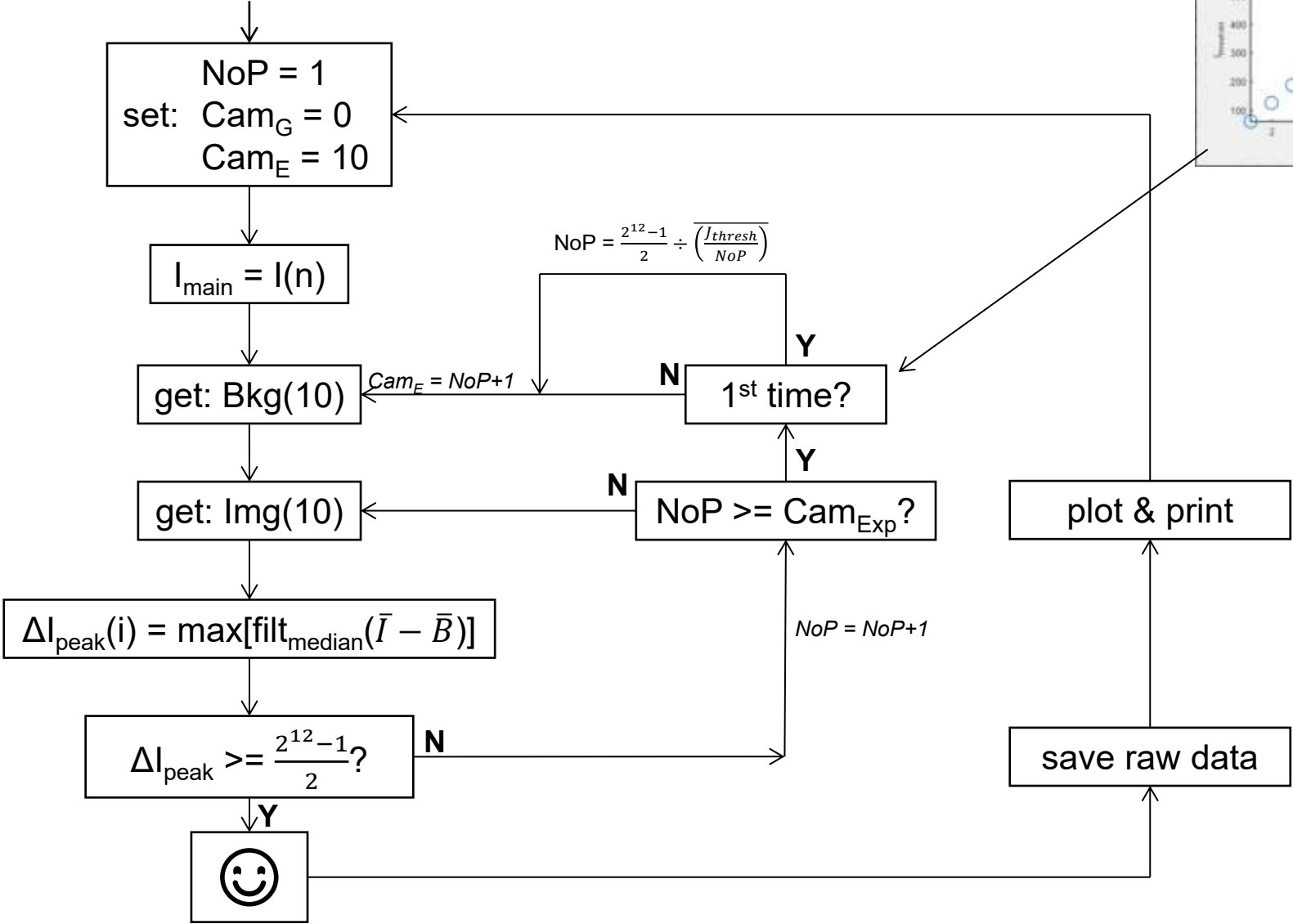
# GetEMSY/MOI Logic Flow (2)

Minimum camera exposure: 10  $\mu$ s



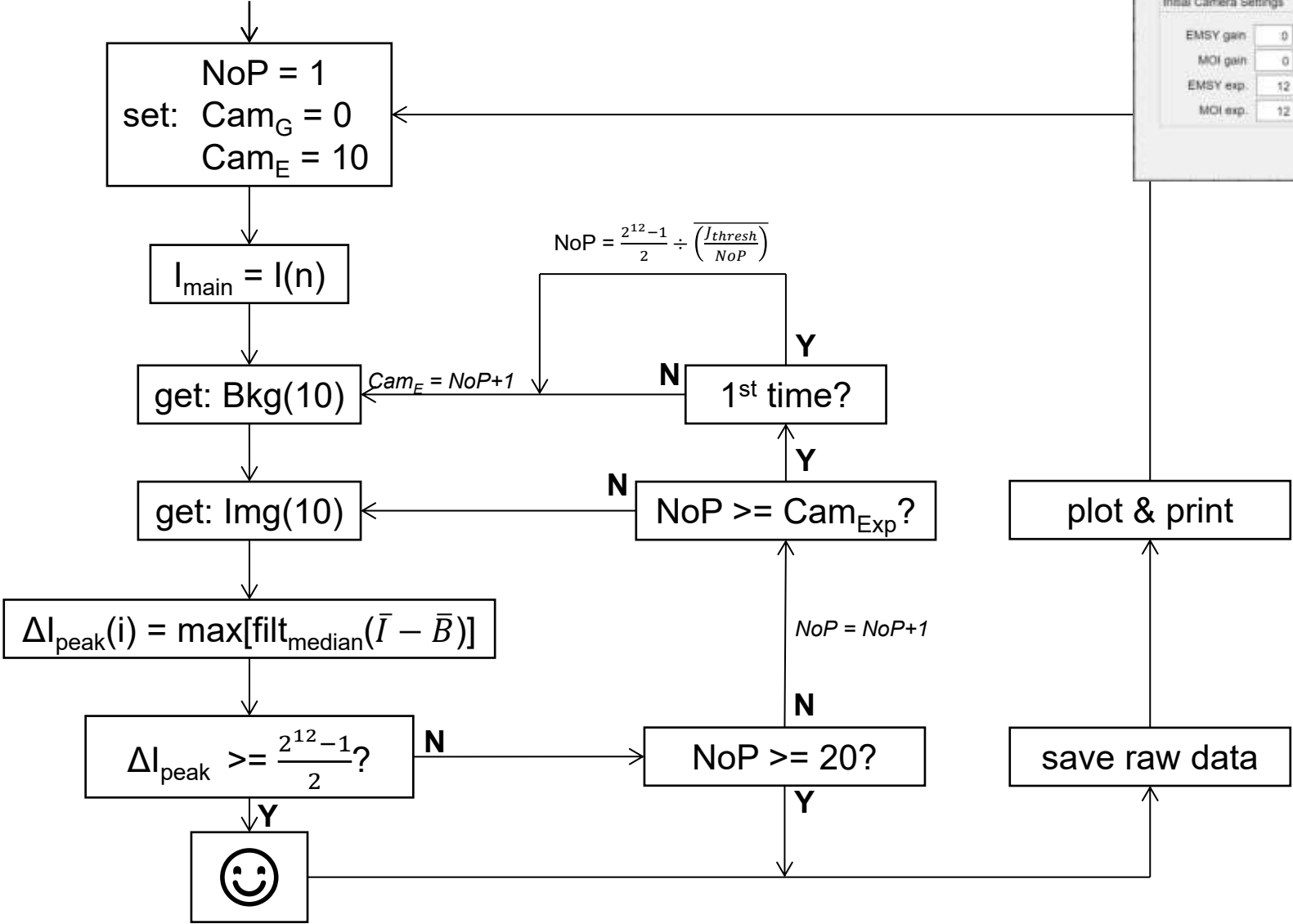
# GetEMSY/MOI Logic Flow (3)

Extrapolate intensity gain per pulse



# GetEMSY/MOI Logic Flow (4)

## Minimize coupler kick: pulse limiter(20)



# Open features/questions

- Cannot duplicate emcalc filter 1:1
  - Alternative filtering methods?
- Upper pulse limit?
- Alternative thresholding method?
- Further feature requests?
  - Autofill Excel table?
  - Stop&go slit scan?
  - Select ROI?

