

# CURRENT ORDER

1. fibre pos
2. any sigs
3. fibre dir
4. pca offset = inj time

Issue: → fibre pos : depends on inj time  
→ inj time : depends on fibre dir  
(S)

~~XXXXXXXXXX~~

①

fibre val funct:

calc fitted light & fibre pos  
for given fibre

→ check if belly plate fibre  
(20 fibres), just txt list

pos is overwritten

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method: → goes through hits :  
applies cuts

counts passed hits

→ checks if PMT in direct cone or reflected cone:

if  $\angle \text{PMT} \leftrightarrow \text{light} < 48$  ( $24^\circ \text{ app.}$ )

⇒ direct

if  $\angle \text{PMT} \leftrightarrow \text{fibre} < 20$

⇒ refl.

→ calculates occupancies

→ divides into cold/hot groups

→ find beamspot(s) centre(s):

1. coarse hist, guesstimate <sup>centre</sup> of bh

2. take weighted avg around estimate

3. 2D gauss fit around weighted spot

⇒ RESULT : dir & refl lightspots positions.

② ⇒ evaluate any sys of TELLIF

Method:

→ get resid time (hit - ToF bucket)

→ get initial light vector = <sup>calc</sup> dir

→ plot & fit time vs angle

③ Calc fibre directions

Method:

load fib pos from RATDB

load fitted dir light spot from 1  
use LPC: Calc By Position  
( fibre pos, DirLightPos, E, loc)  
marks fibres that are v. diff

~~4~~ 4 Calc injection times for each fibre

Method:

- loads fit dir
- loads arg sys
- also does basic overview of run:  
PIN, Nhit, delay, etc...
- loops through events
- gets resid time: hit - ToF - budget  
- arg sys
- plots resid times
- cuts low 20%
- fits gaus
- zooms peak, fits again

~~5~~ 5 Final JSON table

- compile pos, dir, arg sys, pca-offset  
data
- upload ratadb table