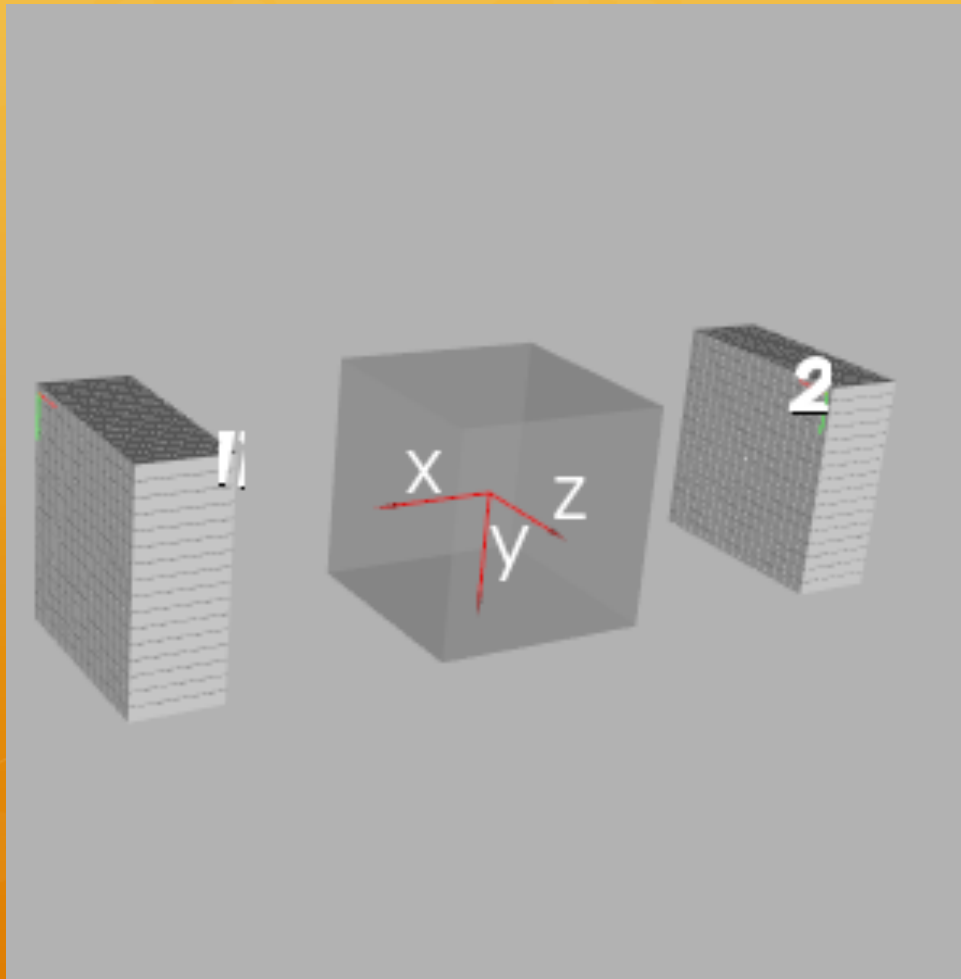# Reconstruction for INSIDE 1vs 1 prototype

Giovanni Pirrone, Niccolò Camarlinghi
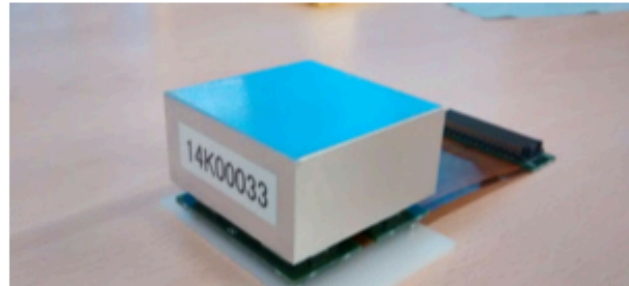
Inside meeting, Roma 18 December 2014

Inside 1vs1 reconstruction software
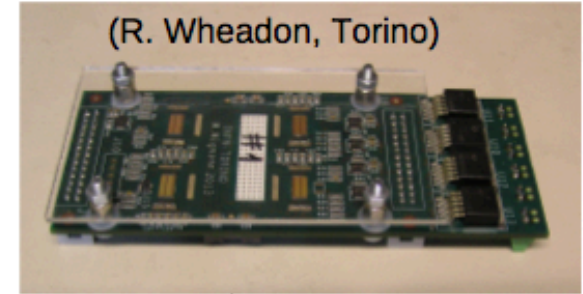

- Number of modules 2
- Face to face distance 15 cm
- Number of crystal per module 256
- Crystal size 3mm
- Pitch 3.2 mm
- FOV size 51x51x51 mm^3
- Voxel size 1.5x1.5x1.5 mm^3
- Model size 256Mb
- SRM 4x4x8 rays per crystal
- DOI modeling

Next beam test

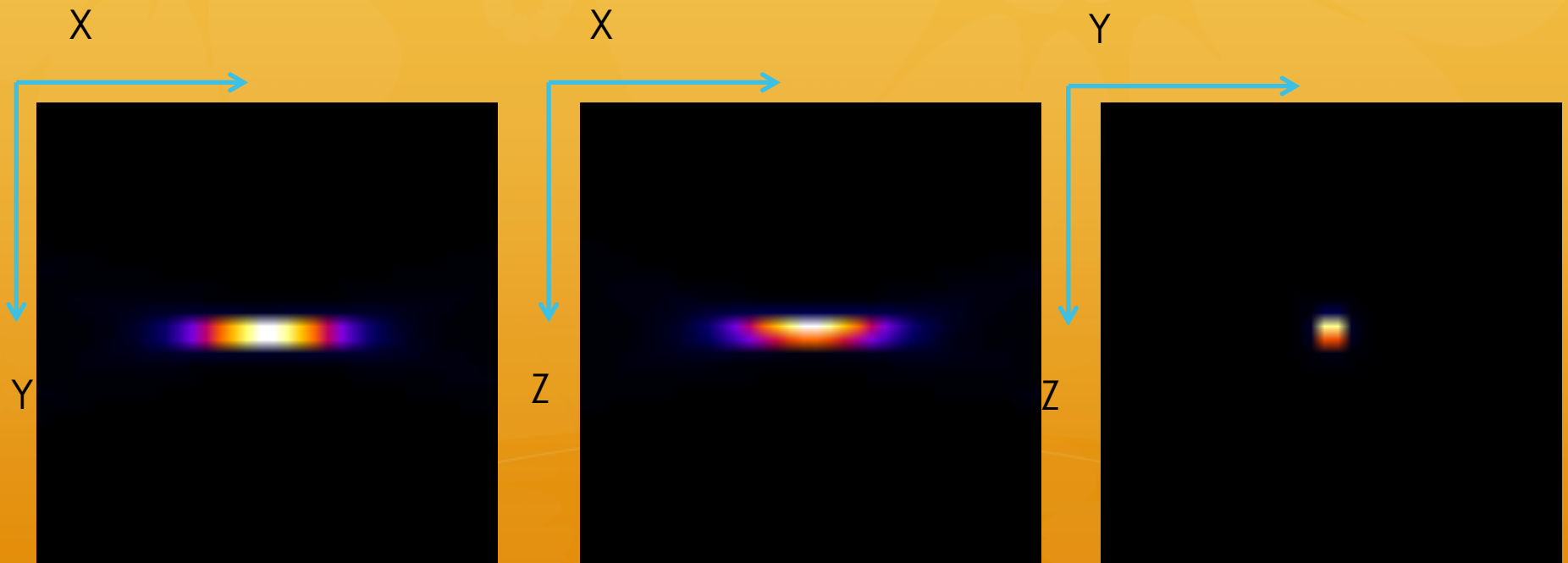**LSF + Hamamatsu SiPM matrix**

(R. Wheadon, Torino)

PMMA
Phantom

Proton beam
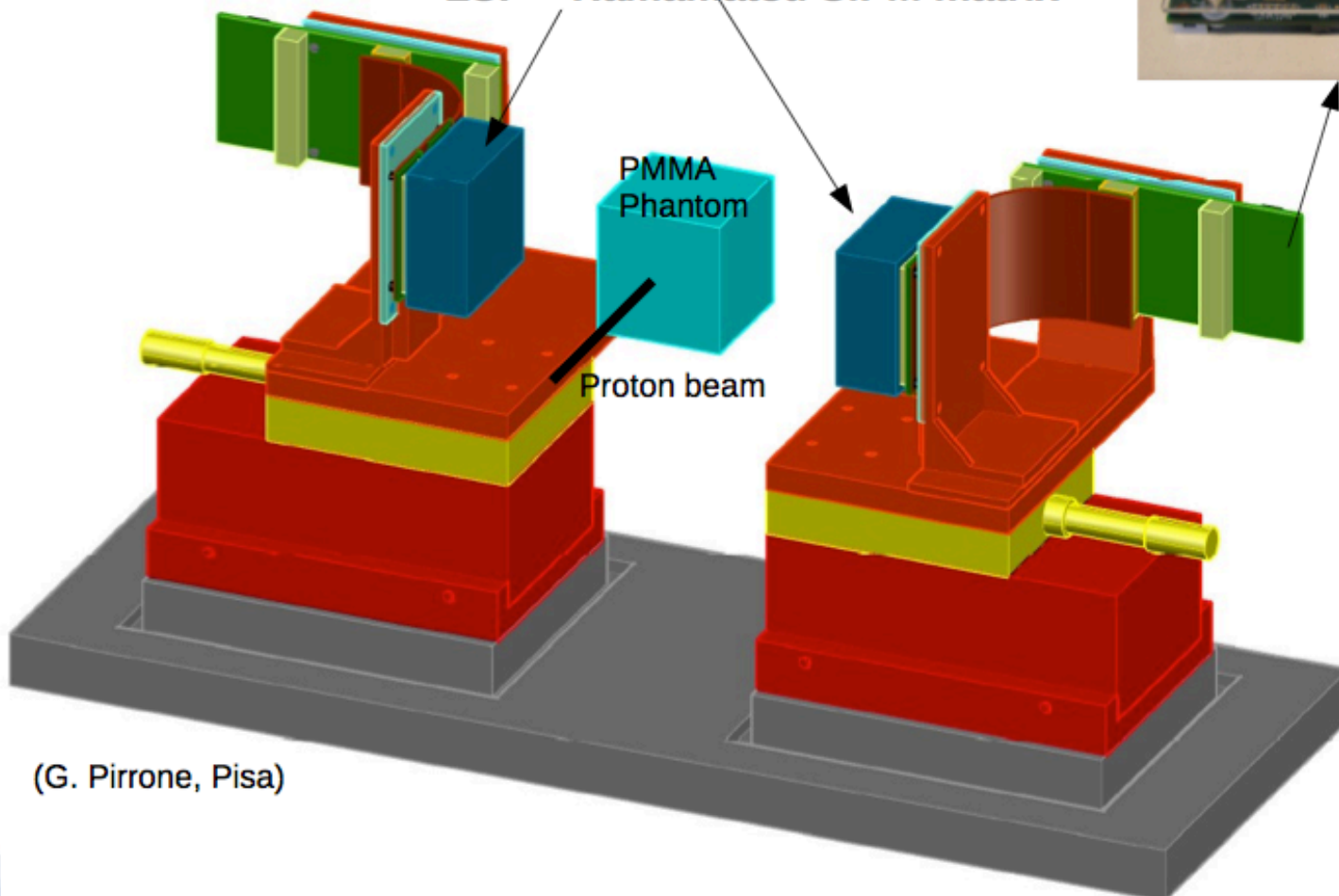
(G. Pirrone, Pisa)

Point source in the FOV center

Gate simulation:
- Acquisition: 120 s
- Activity   300 k Bq (8 uCi)
- Na^{22} 0.25 mm radius in a PMMA cube of 10x10x10 mm^3

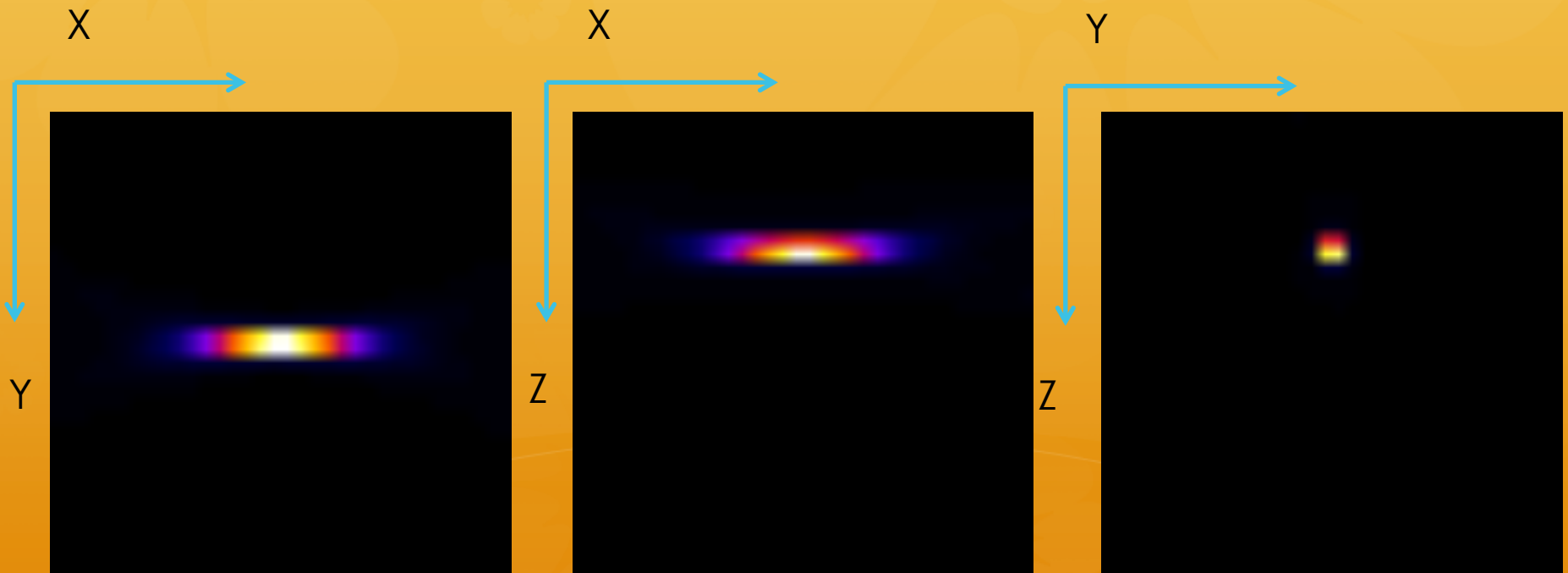**Recon parameters**
- 5 iterations performed

Point source 10 mm along Z

Gate simulation:
- Acquisition: 120 s
- Activity   300 k Bq (8 uCi)
- Na^{22} 0.25 mm radius in a PMMA cube of 10x10x10 mm^3

Recon parameters
- 5 iterations performed

Summary

- To be done:
  - Reconstruction with a smaller pixels
  - Validating on other simulation data and real data

- Issue to discuss before the next data taking
  - Preprocessing/Calibration sw?
  - Normalization :
    - Build the phantom (DoPET1 phantom still available?)
    - Perform the normalization (CNR) before next data taking ^{18}FDG
  - Computer for recon/analysis?