

The Paris Bench Test for EUSO

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Introduction

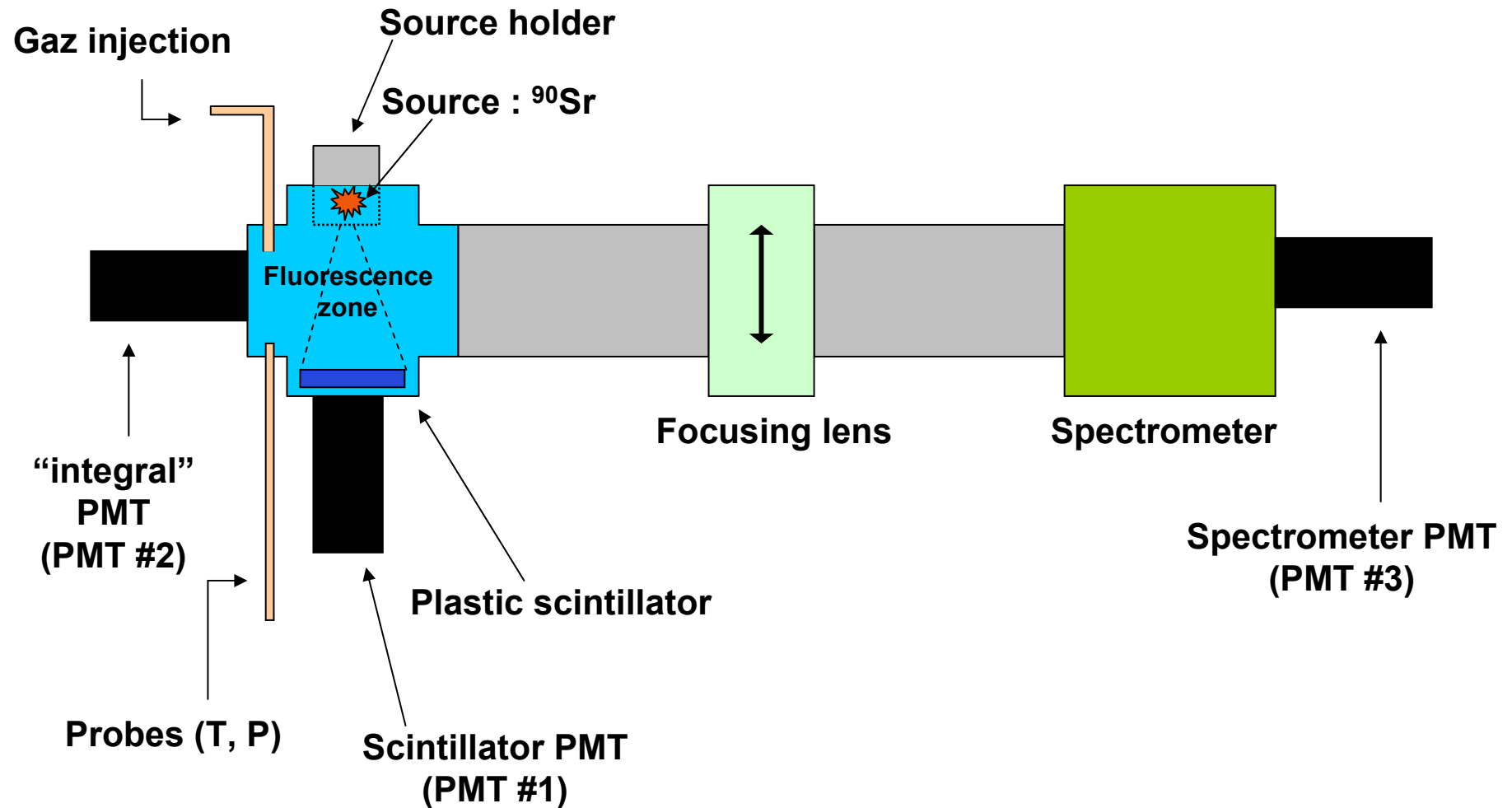
- **EUSO group in the PCC – CdF**
- Philippe GORODETZKY
Pierre SALIN
Nathan Bleurvacq
Patrick Guillouet

What will I talk about ?

- The Set-up
- The Spectrometer
- The DAQ
- A Measurement

- Conclusion

Bench Diagram

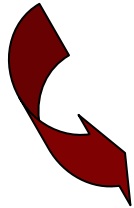


The PMTs

- PMT #1 **below**
measures the ^{90}Sr spectrum
generates gates
- PMT #2 **integral**
EUSO configuration
[300-400nm] wavelengths
- PMT #3 **in spectrometer**
1 nm bandwidth

Expected counting rates

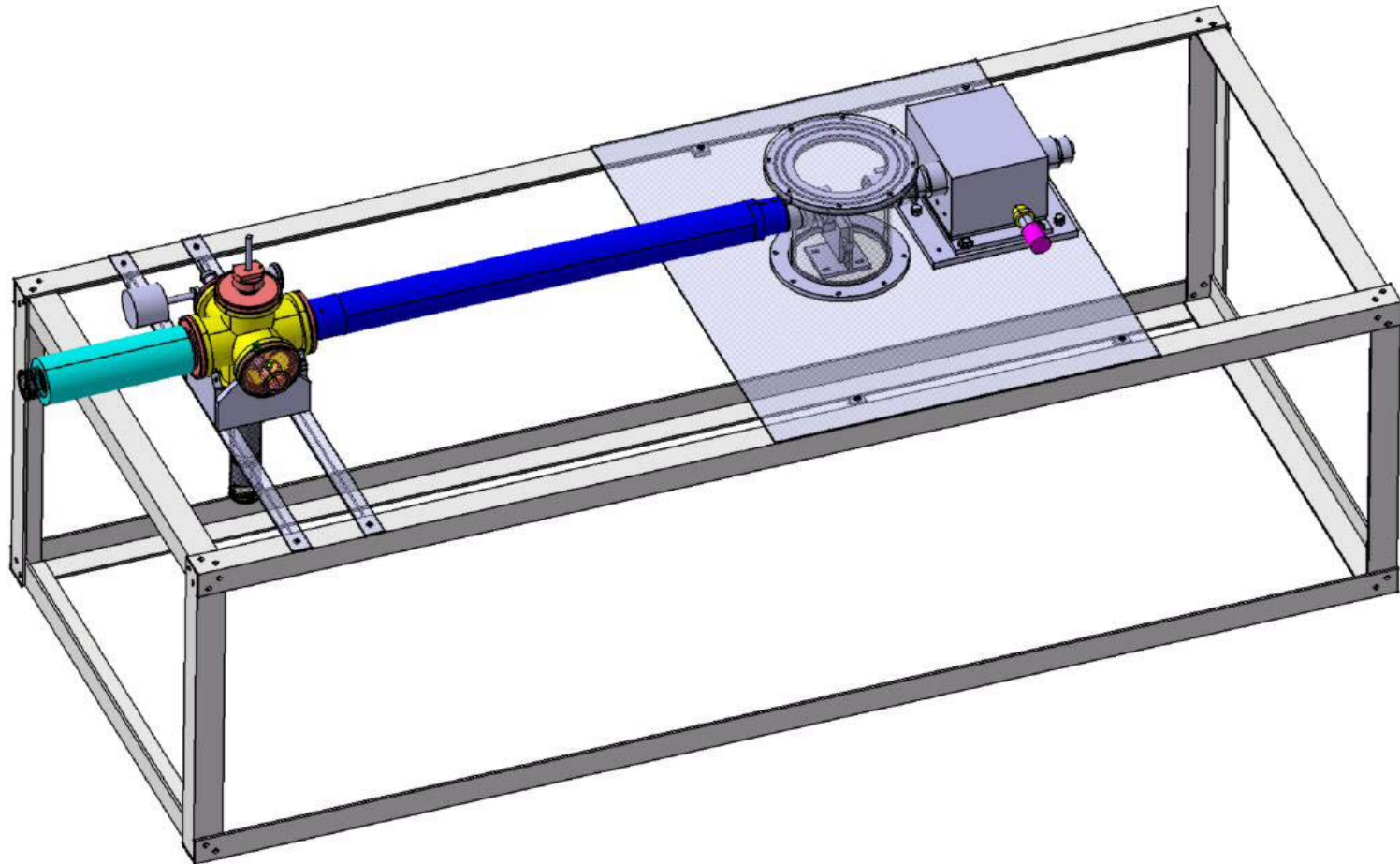
- PMT #1 $\approx 10^6$ Hz
- PMT #2 $\approx 10^3$ Hz
- PMT #3 between 2 and 100 Hz



- **Geometry :**
 - Path length of the e-
 - Solid angle,
 - Size of the slits...
- **Physical parameters :**
 - Gaz
 - Pressure, Temperature, impurities...

Fluorescence Bench

(under construction)

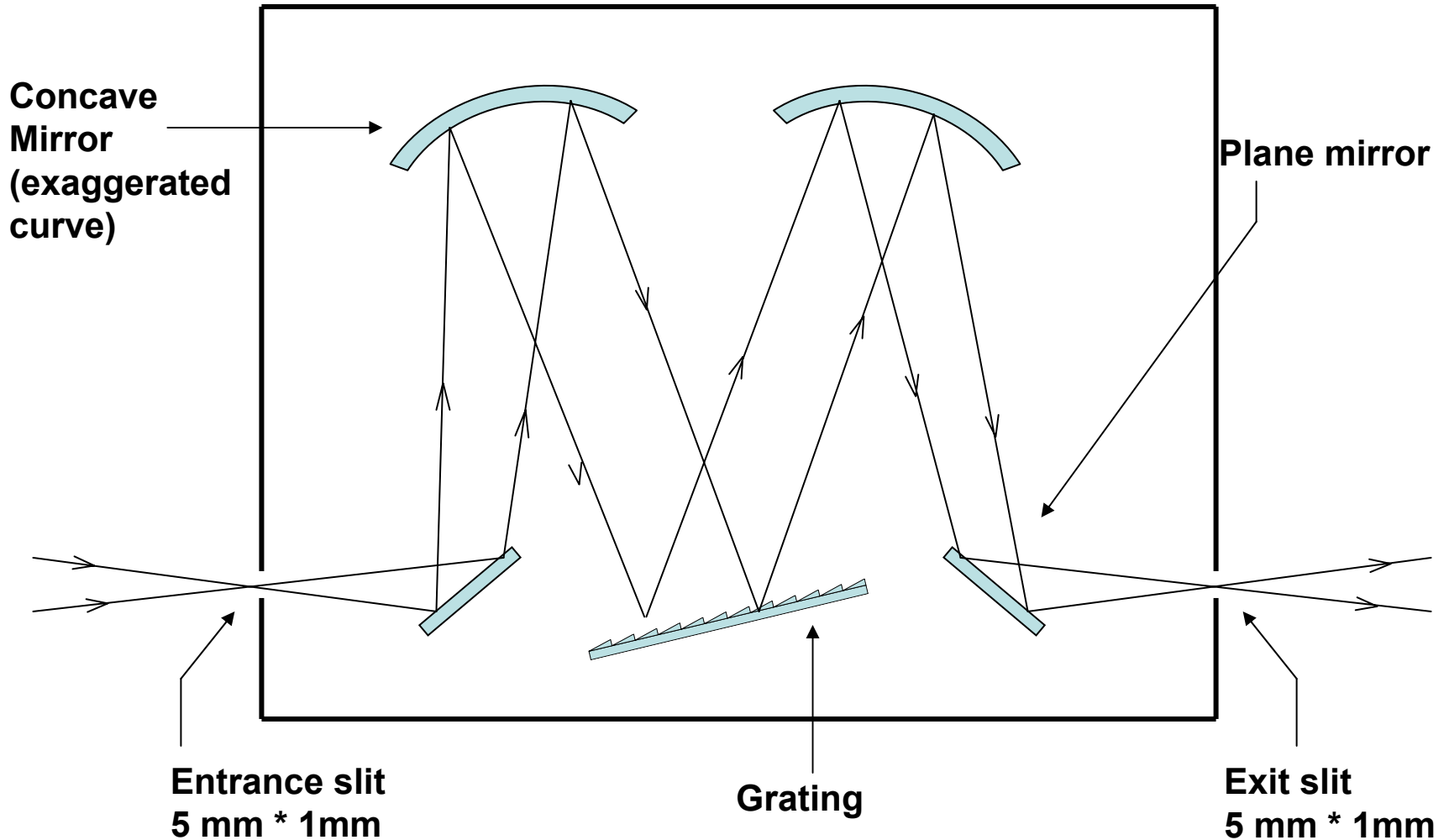


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The Spectrometer



Characteristics of the spectrometer (1)

- INITIALS :

- Focal length 250 mm
- Aperture ratio F / 4
- Total spectral range 0 to 1 200 nm
- Reading precision 0,1 nm
- Calibration precision +/- 0,5 nm
- Resolution 6 nm / mm

Characteristics of the spectrometer (2)

- IMPROVEMENTS :

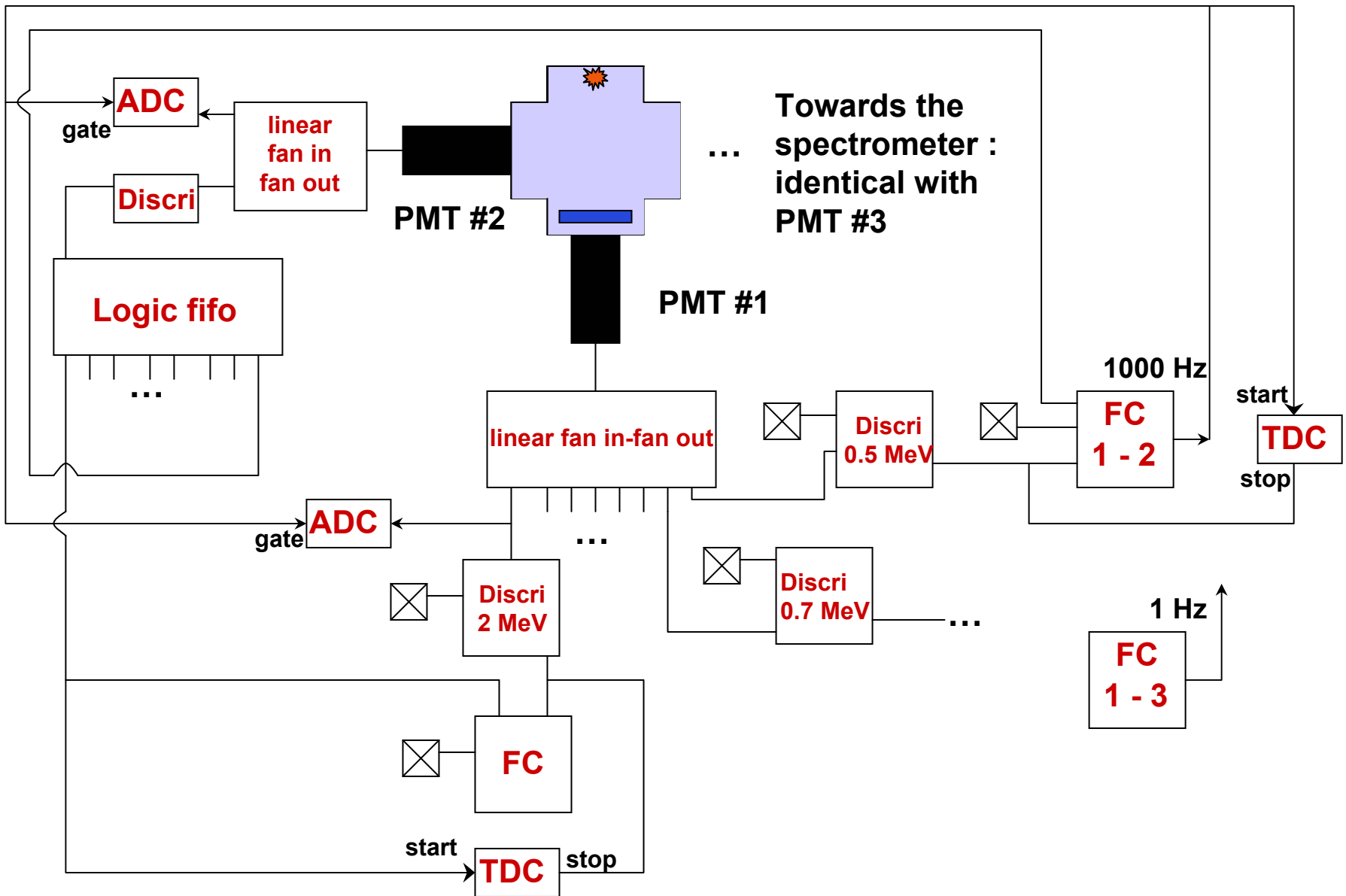
- **stepping motor** → control rotation
- **Optical flag** → known position
- **Potentiometer** → control the motor

What will I talk about ?

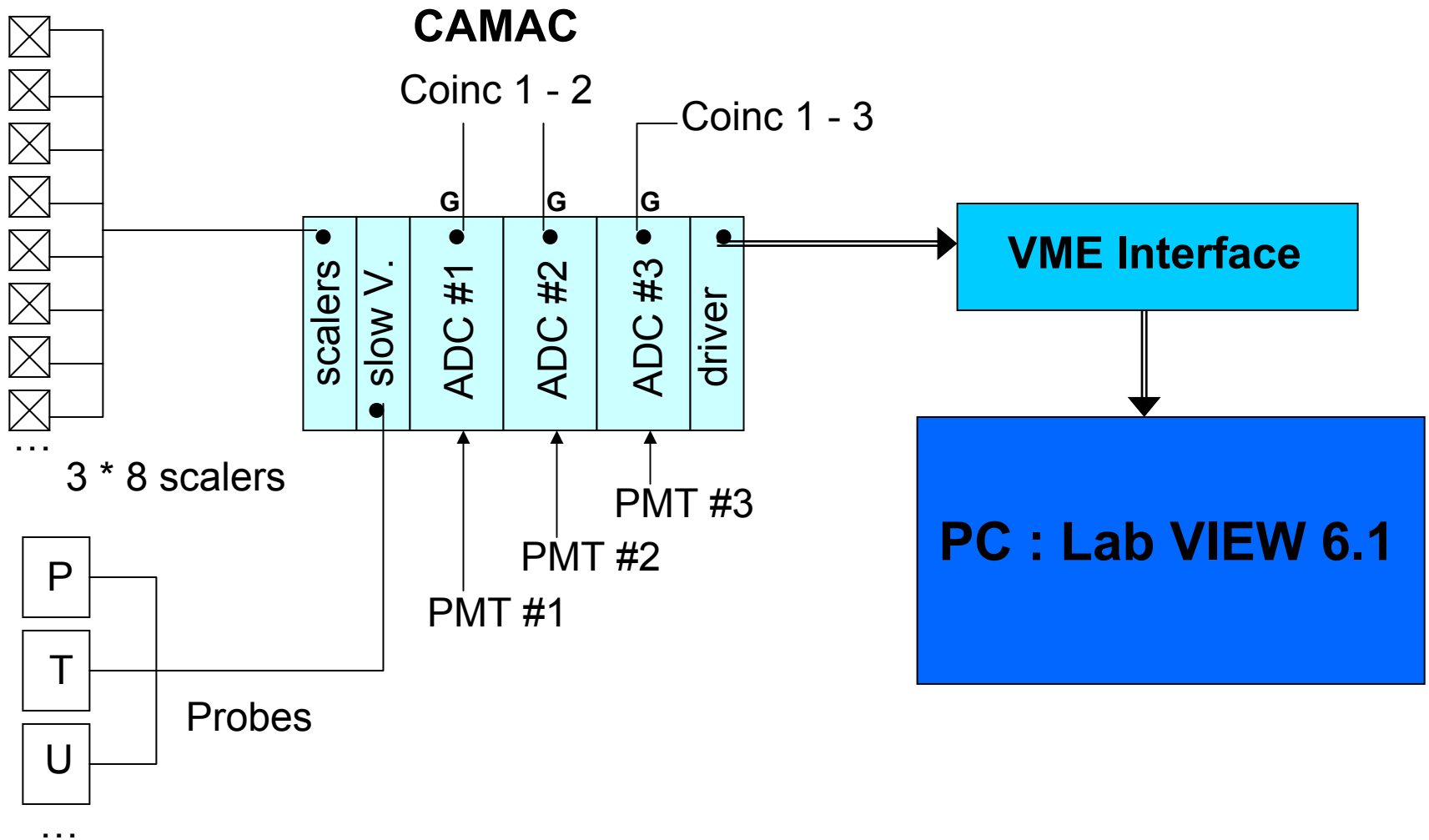
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DAQ 1 : fast acquisition



DAQ 2 : slow acquisition



A Measurement

ADJUST all physical parameters

Change
1 par.

Next nm

GO to the right position

COUNT photons, electrons, seconds

MEASURE P, T, U...

CHECK their validity

Are they in the defined intervals ?

YES

WRITE in the data file




NO

WRITE an error message

WRITE in the data file

Conclusion

TODAY :

- Set-up  under construction
- NIM modules  testing
- Lab VIEW DAQ  writing

We expect (hope) having this completed in January.