



# Report on availability of crystals for MUonE calo discussions

- ✦ CMS PbWO<sub>4</sub> crystals
- ✦ Pb-glass ex-OPAL

Wednesday meeting, 13 November 2019

## Contacts with

**Francesca Cavallari until summer 2019**

*(and discussions with Etienne Auffray, Alexander Singovsky)*

**at present Federico Ferri, new CALO project manager**

## Present situation:

CMS **can lend** us a matrix of GOOD crystals

**5 x 5 crystals (~ 14 x 14 cm<sup>2</sup>)**

*( to be confirmed if they we can have also the PD, but they should)*

All are working fine

Dimension of the crystals are pyramidal :

**28.6 cm front / 30 mm back , thickness 220 cm (23  $X_0$ )**

# The CMS crystals PbWO<sub>4</sub>

In case MUonE has funds for buying new crystals, one possibility could be to complete the matrix up to 20x20 cm with newly produced ones for a total price **O(50keuro)**.

## ➡ Information on new PbWO<sub>4</sub> crystals procurement:

There is now the firm **CRYTUR**, which produces routinely PbWO<sub>4</sub> crystals of 20 x 20 x 250 mm dimension. *(Quality is excellent, according to PANDA and JLAB, for which they are producing several thousands of such crystals).*

I contacted **CRYTUR**, and got the following info:

- ★ Price is ~**1750 euro for 20x20x230 mm** crystal, with required quality
- ★ A small number **O(30)** could be produced in 3-4 months, *if large number, a planification must be revised (at present quite saturated by the orders of Panda and JLAB).*

## ➡ Information on APD procurement:

Hamamatsu recent quotation is **300 euro/tube** (S8664-55 Si APD as used by CMS)

# The Pb-glass crystals (from OPAL)

OPAL Pb-glass blocks were taken by NA62. They are using  $\sim 1000$  blocks, in a completely satisfactory way.

There are  $\sim 300$  left, already tested and accepted (*left over by redundancy, not by quality criteria*). *These 300 are available from now.*  
*80 of these are equipped with PMT as PD*

Dimensions: **95 x 95 x 380 mm**

Timing of Pb-glass is OK, **trasversal size** can be critical

*Waiting from Padova simulation if transversal dimension is too large for the central region. Is it adequate for an external region????*



**Padova is investigating the importance of the transversal (longitudinal?) size for PID application in the central part of the calorimeter.**