



**SAPIENZA**  
UNIVERSITÀ DI ROMA



# The group at Sapienza / INFN Rome

Marco Vignati, LNGS, 19 March 2024





# People

2+1 seniors, 4 PhD + 4 MSc



Eric (Visiting)



Daniele



Dora

Matteo C

Angelo

Marco G

Marco

Danilo

Matteo dGR

Gianluca

Matteo F

Giorgio



Dottorando

Laureando

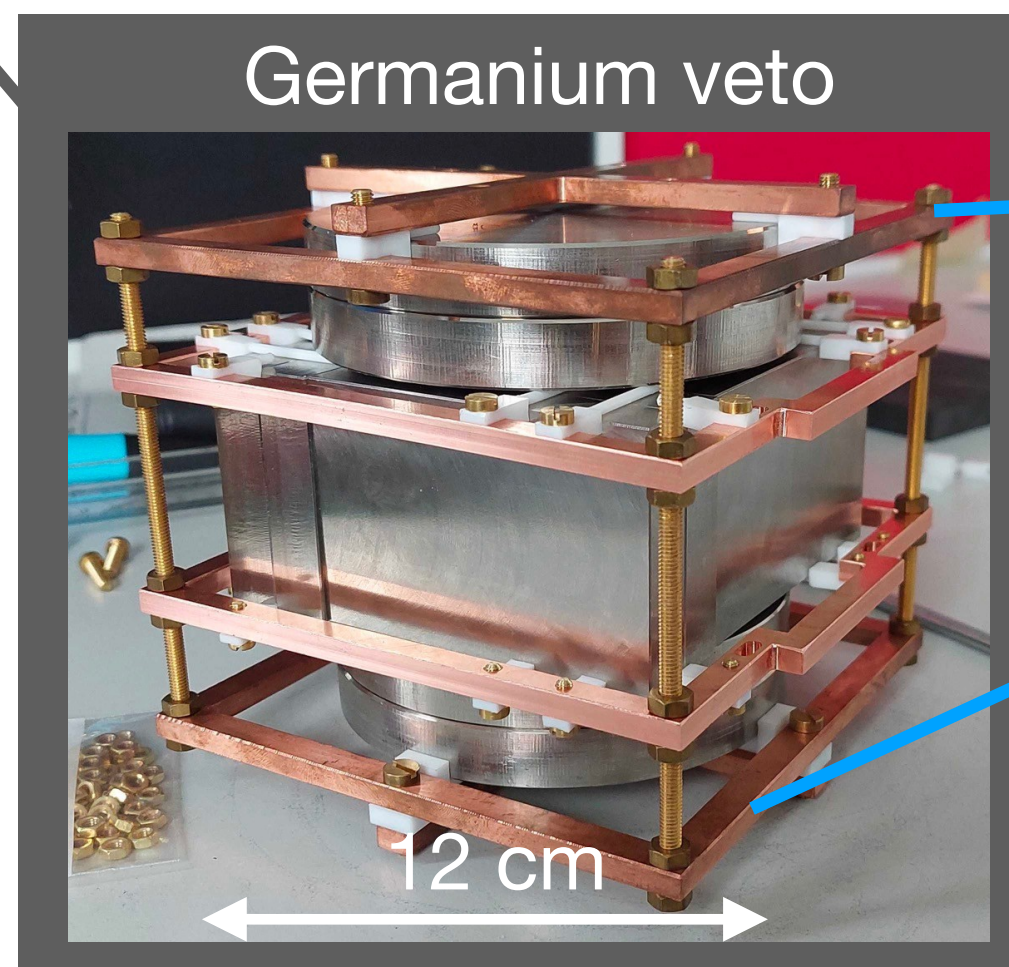
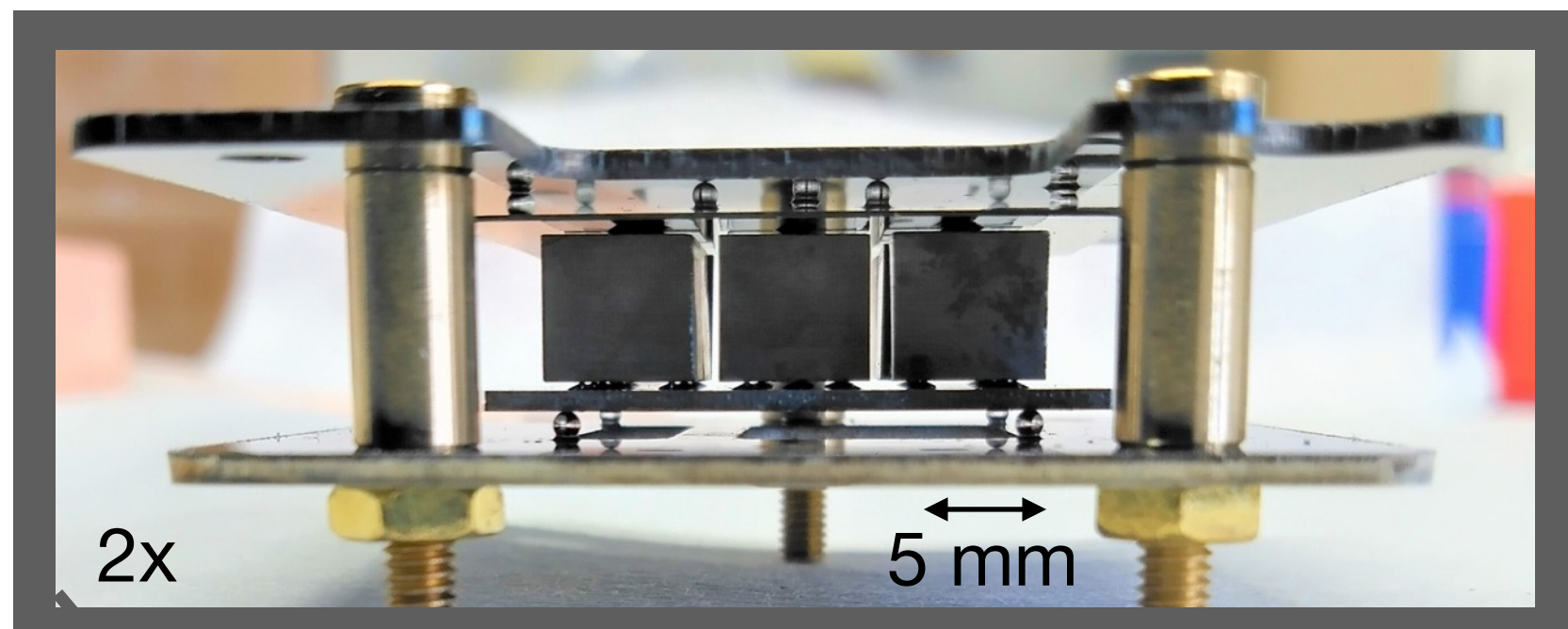
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# CEvNS experiment: NUCLEUS

Neutrino target: crystals  $5 \times 5 \times 5 \text{ mm}^3$   
9  $\text{Al}_2\text{O}_3$  (4 g) and 9  $\text{CaWO}_4$  (6 g)  
20 eVnr threshold



Cryostat 10 mK  
Shielding Pb+PE+B<sub>4</sub>C:  
100 counts / kg keV d



Now: Phase 1 - 10 g  
Future: Phase 2 - 1 kg, BULLKID-Ge?

Neutrino source: Chooz nuclear plant  
 $1.7 \times 10^{12} \text{ } \nu/\text{cm}^2 \text{ s}$



20% precision on  $\sigma_{\text{CEvNS}}$   
(1 year of data taking)



# Expertises

- Particle physics (neutrinos and Dark Matter)
- Cryogenics
- Detector assembly / bonding
- Data Analysis / Programming
- RF systems (user level)