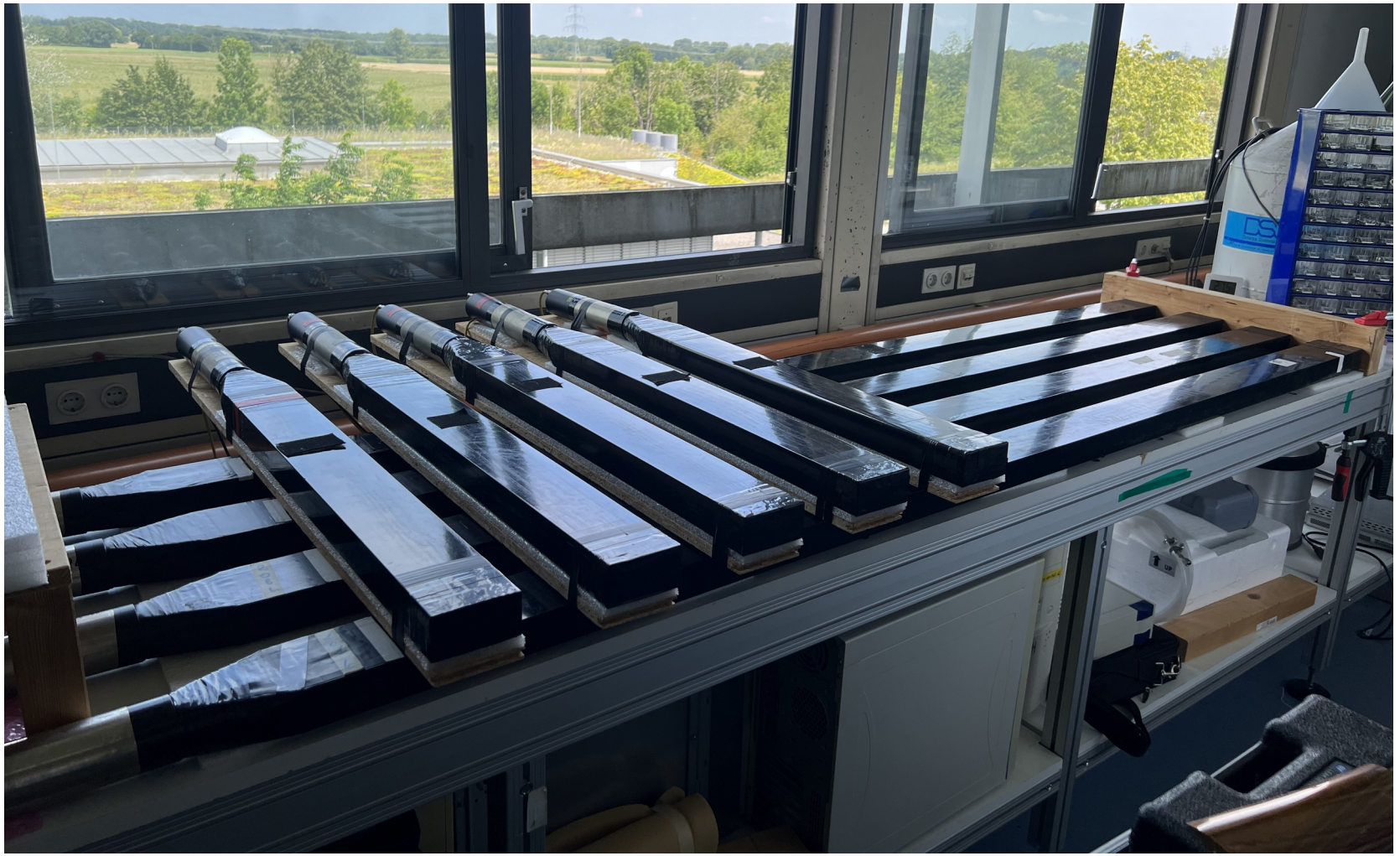
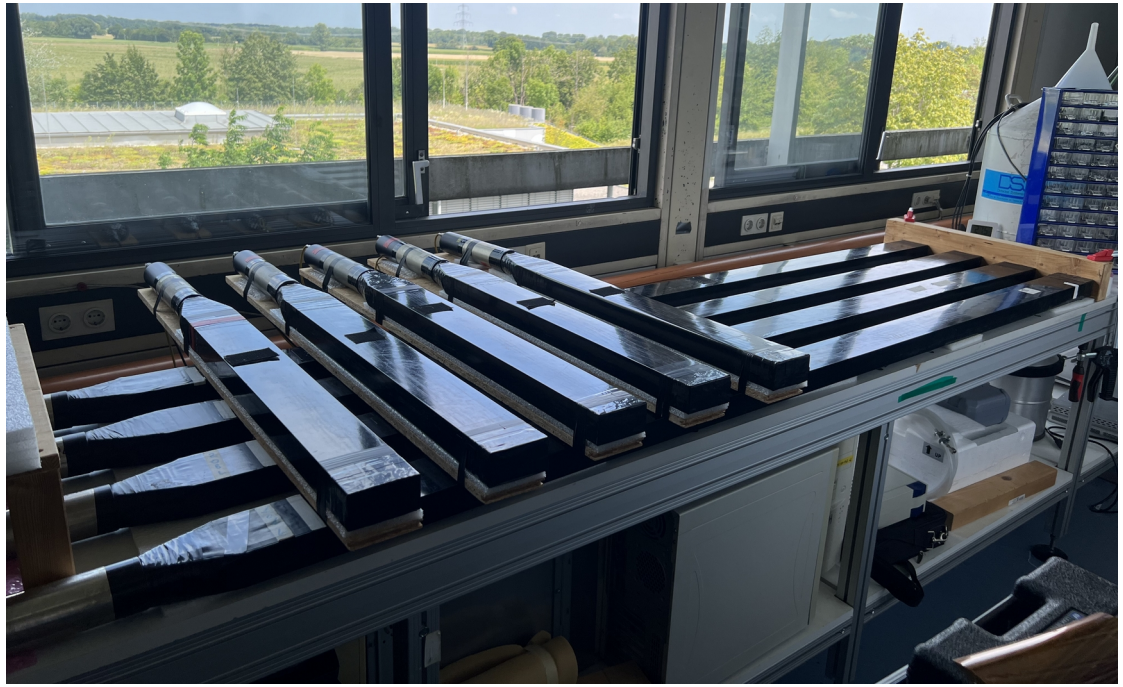
Muon Detection with Scintillators

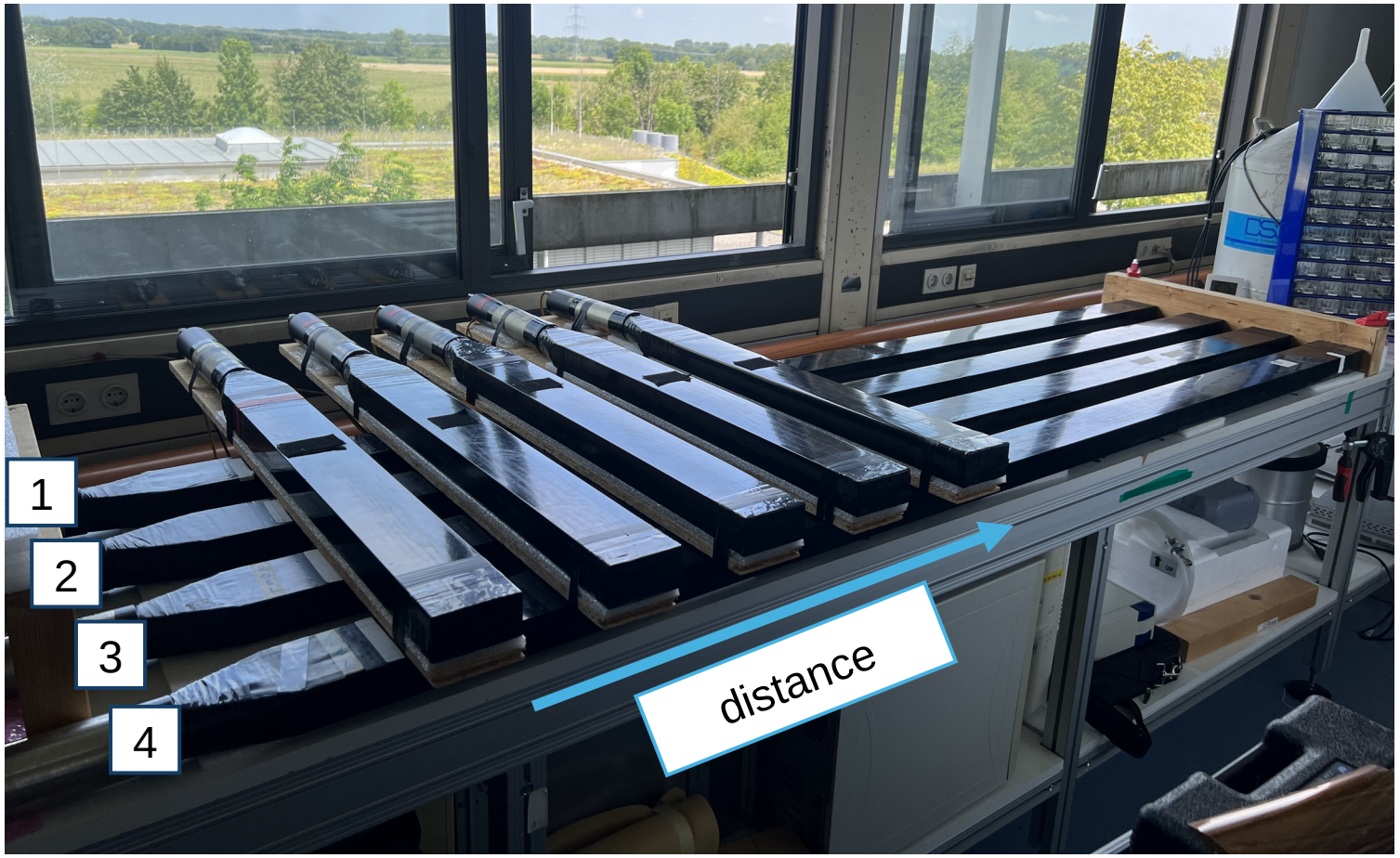


Muon Detection with Scintillators

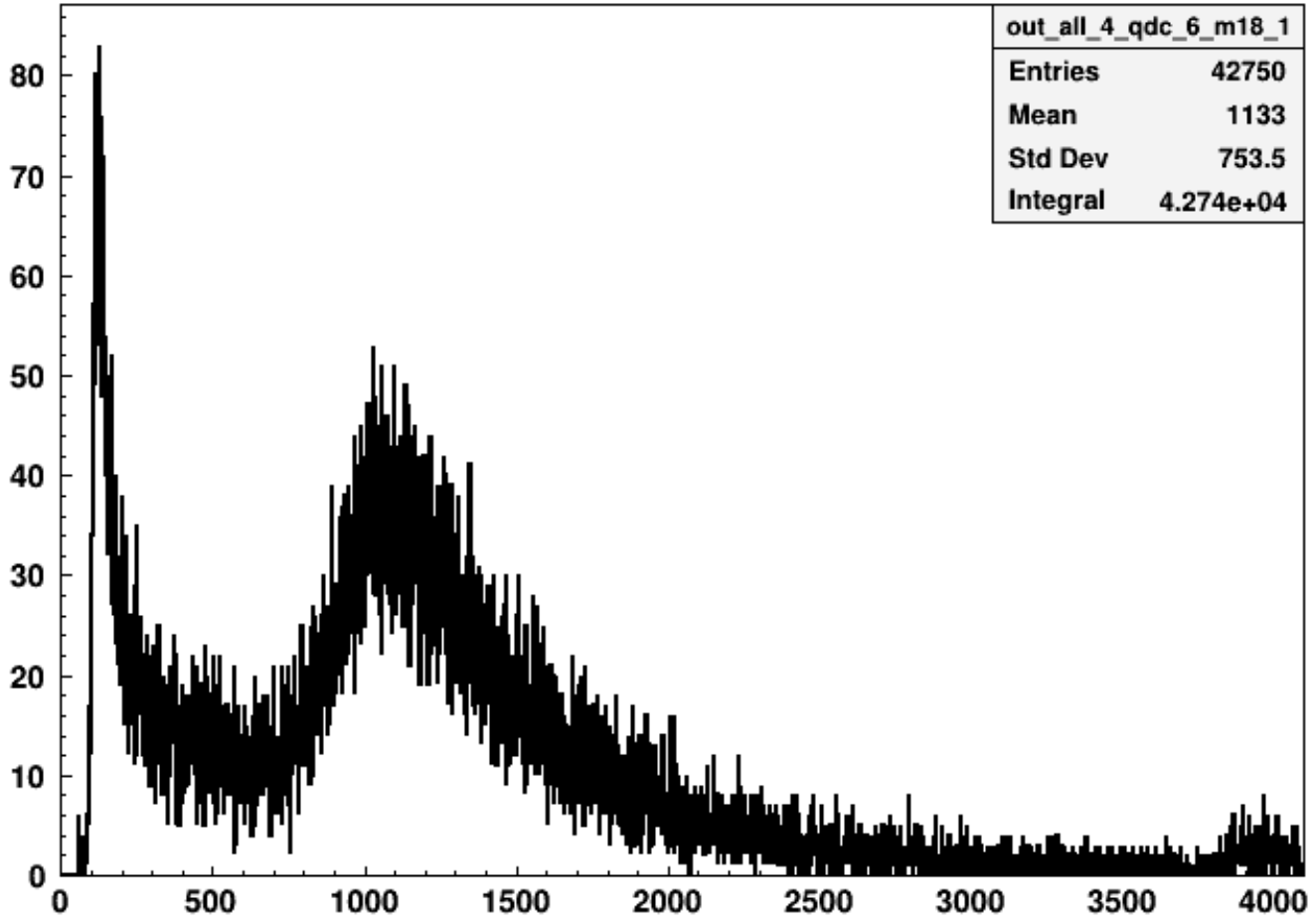


- We need 20 well working scintillators
  ➡ look for leaks, absorption length
- Determine efficiency along length

Signal Absorption of Scintillators

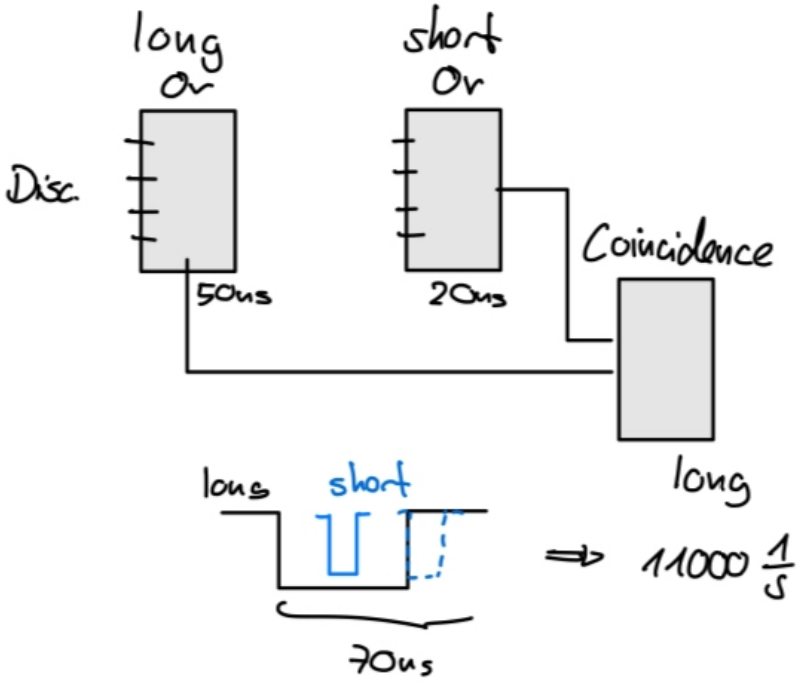


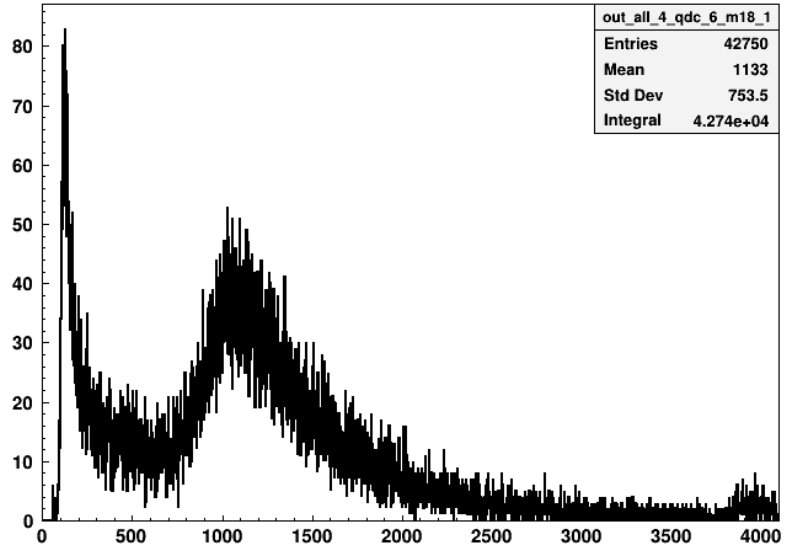
Signal Absorption of Scintillators



Signal Absorption of Scintillators

by chance?:

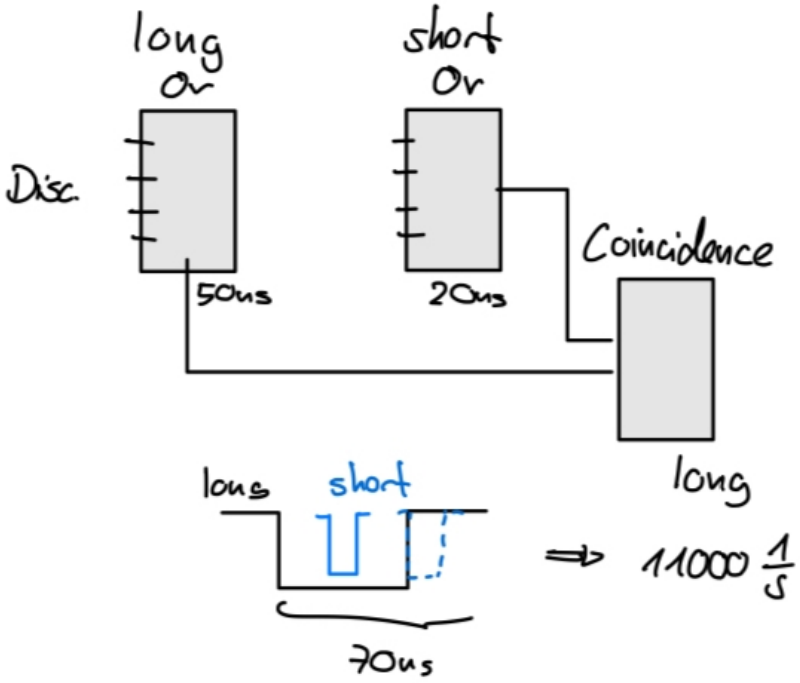


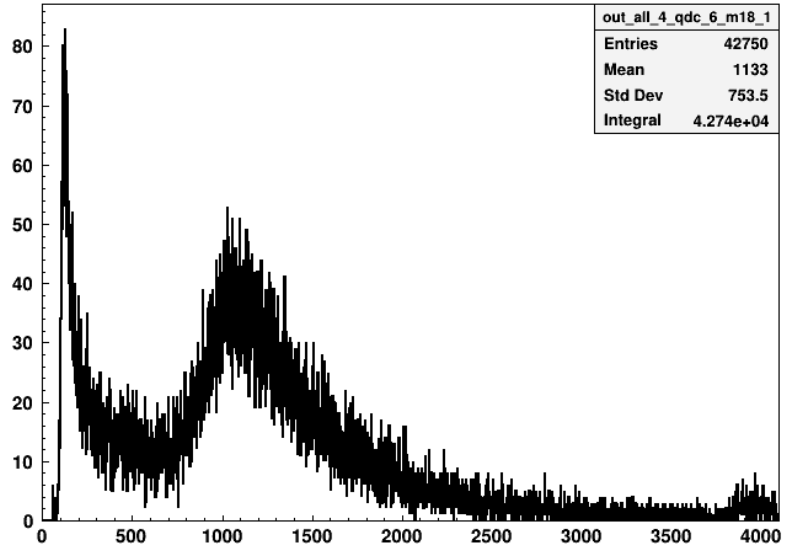


$\Rightarrow 11000\,\frac{1}{s} \cdot 800\,\frac{1}{s} \cdot 70ns = 0{,}6\,Hz \ll 40\text{-}50\,Hz$

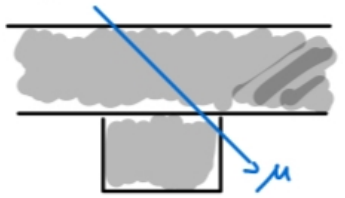
Signal Absorption of Scintillators

by chance?:



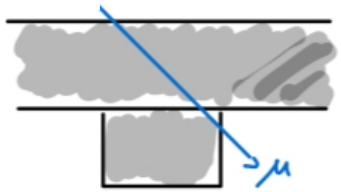


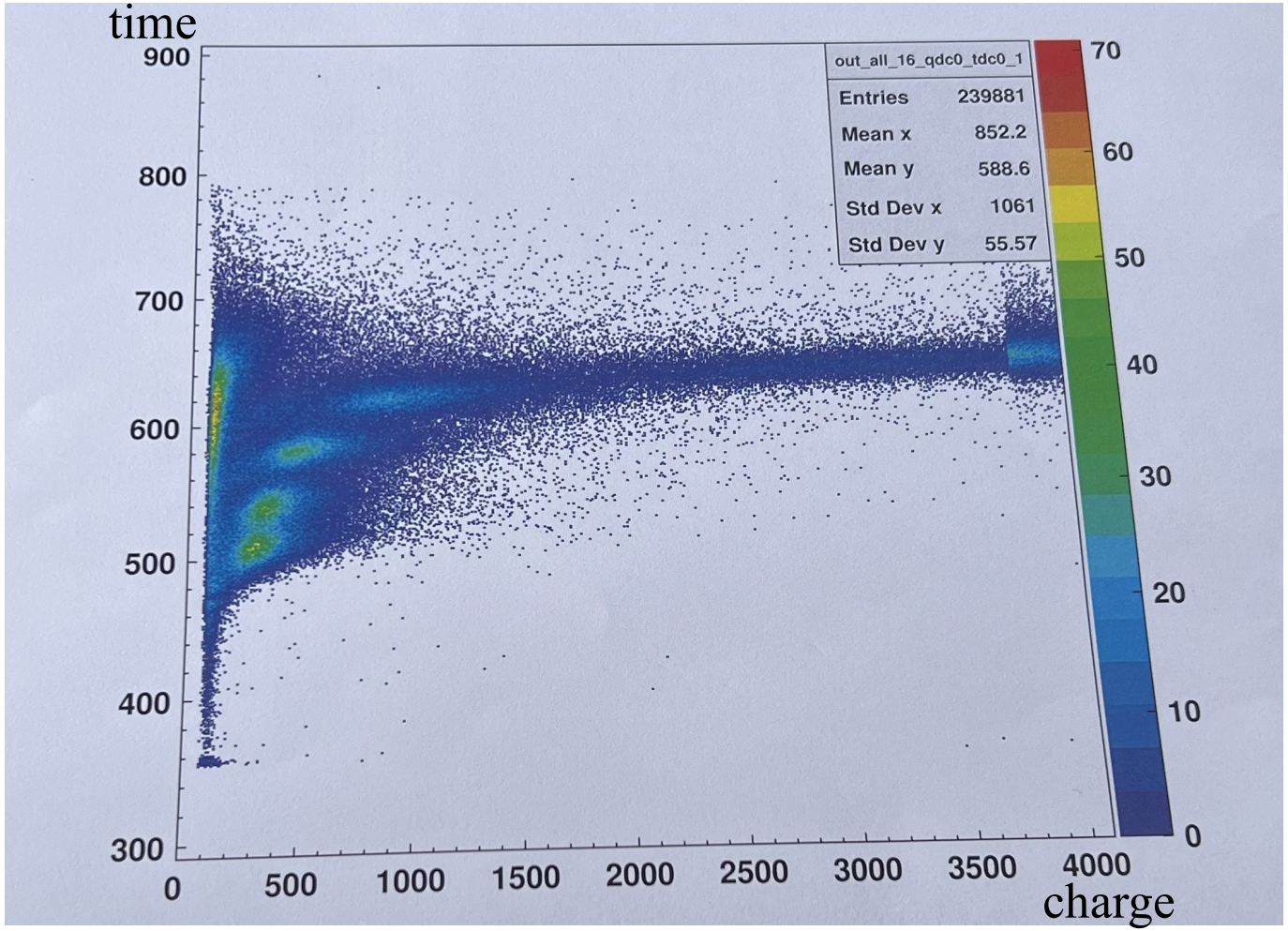
$\Rightarrow 11000\,\frac{1}{s} \cdot 800\,\frac{1}{s} \cdot 70ns = 0{,}6\,Hz \ll 40\text{-}50\,Hz$



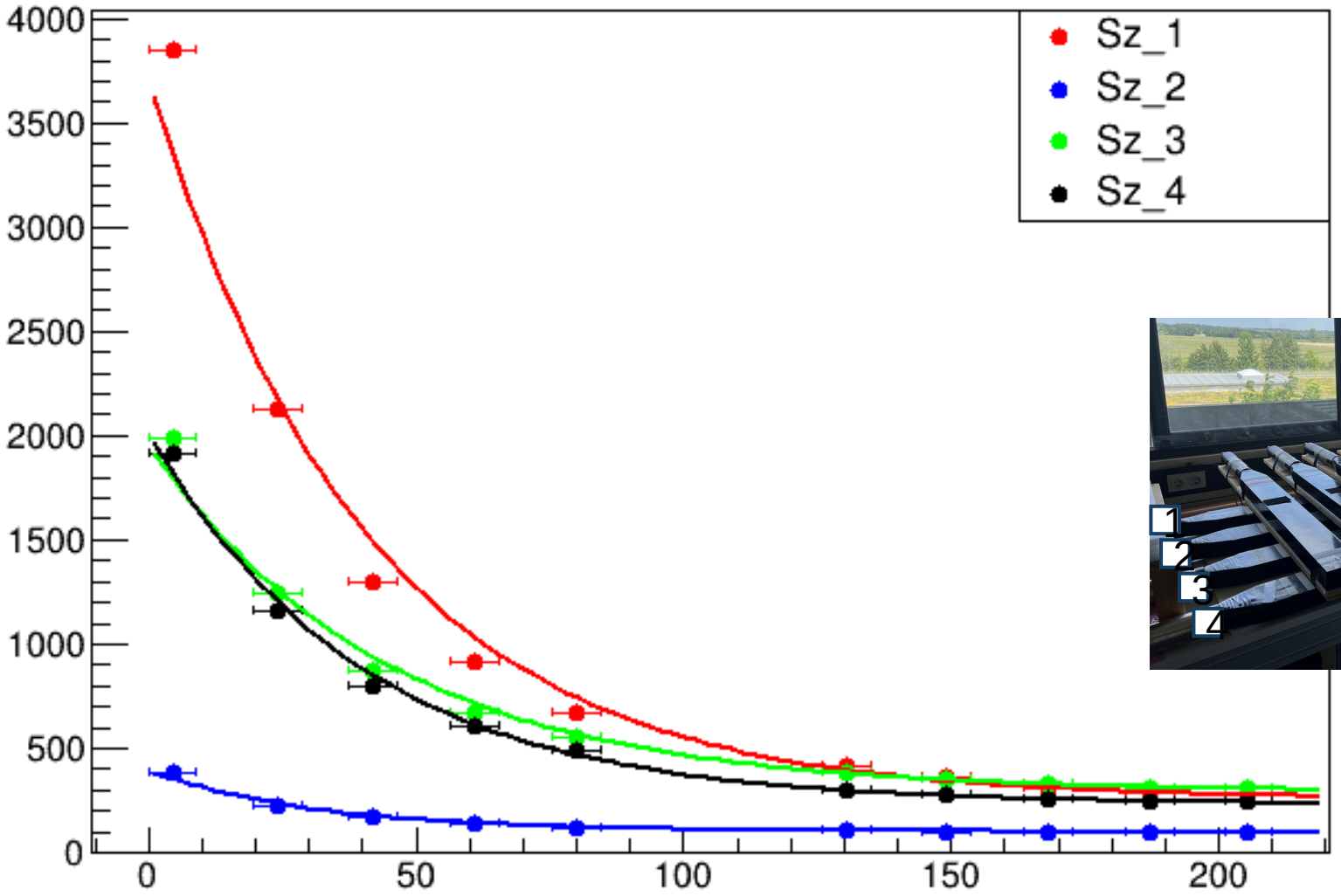
No!

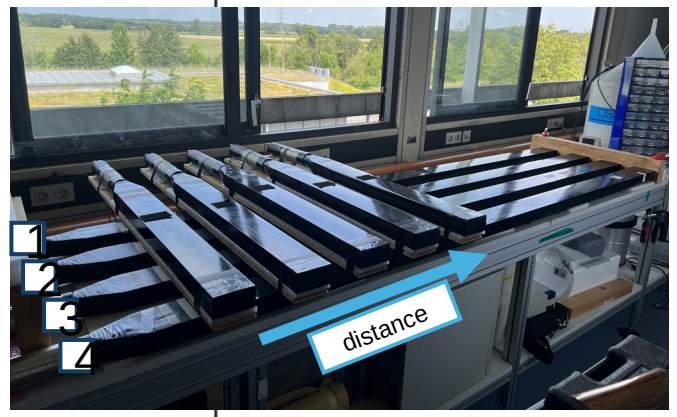
Signal Absorption of Scintillators





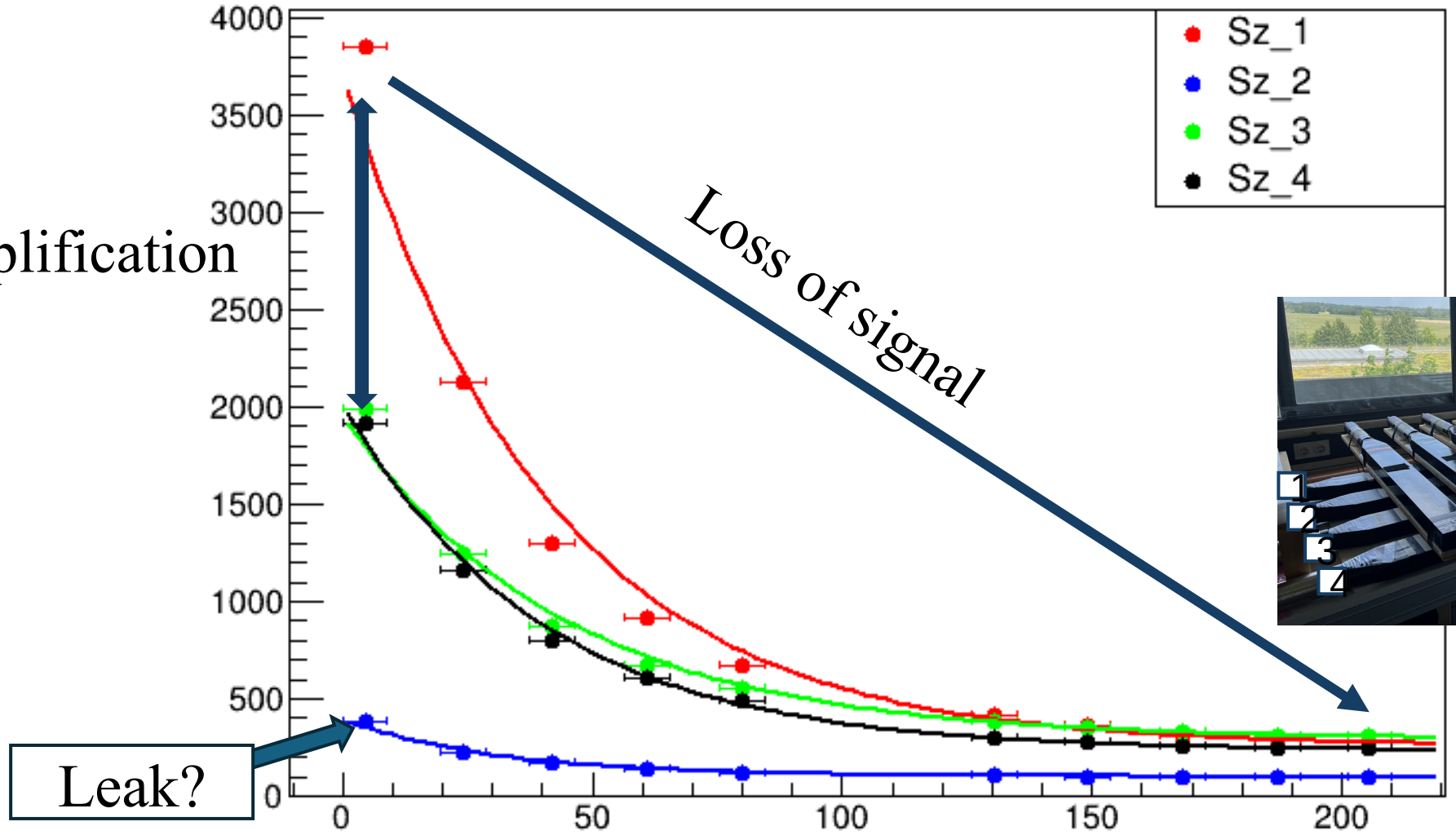
Signal Absorption of Scintillators

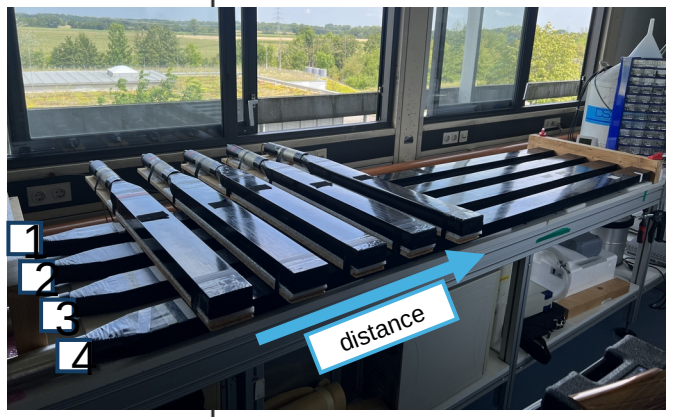




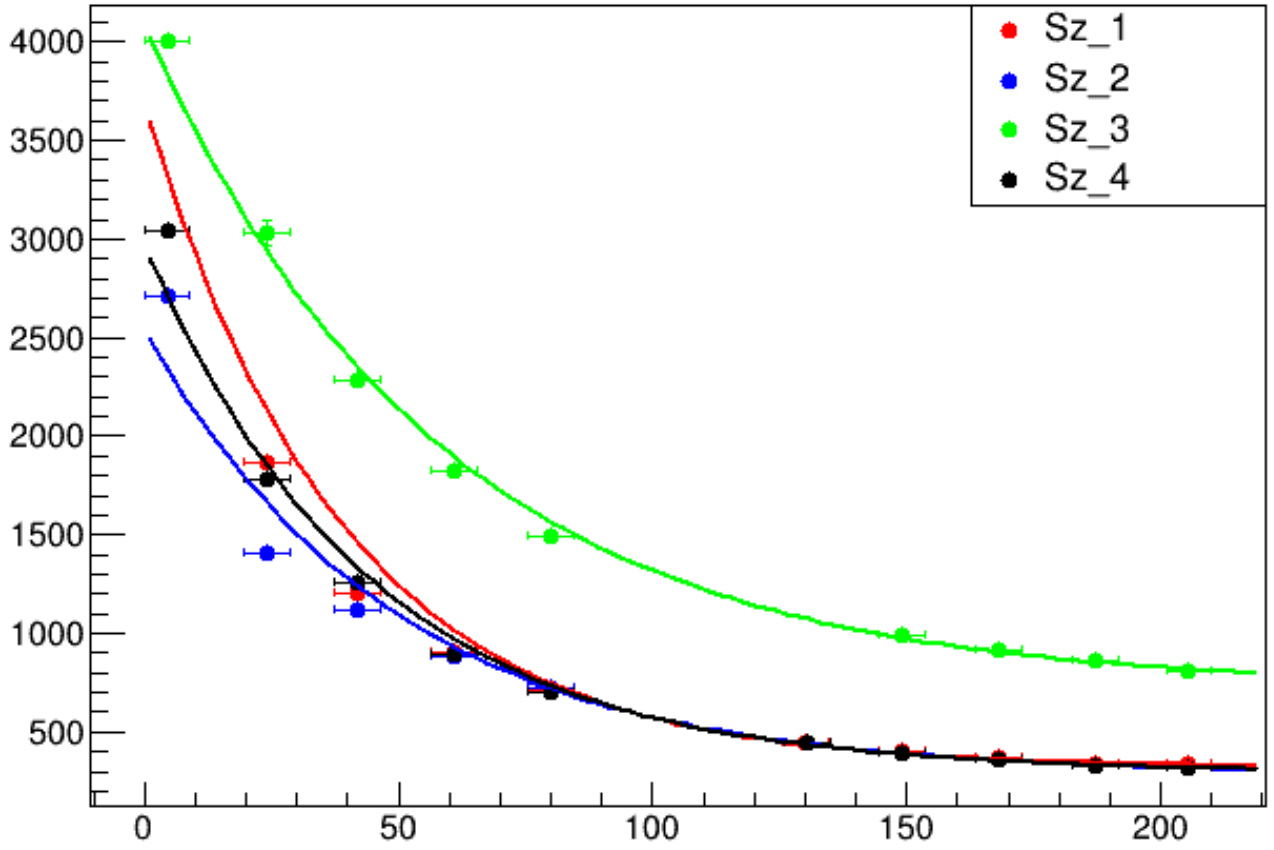
Signal Absorption of Scintillators

Amplification





Signal Absorption of new Scintillators



Leak at Scintillator

- Leak

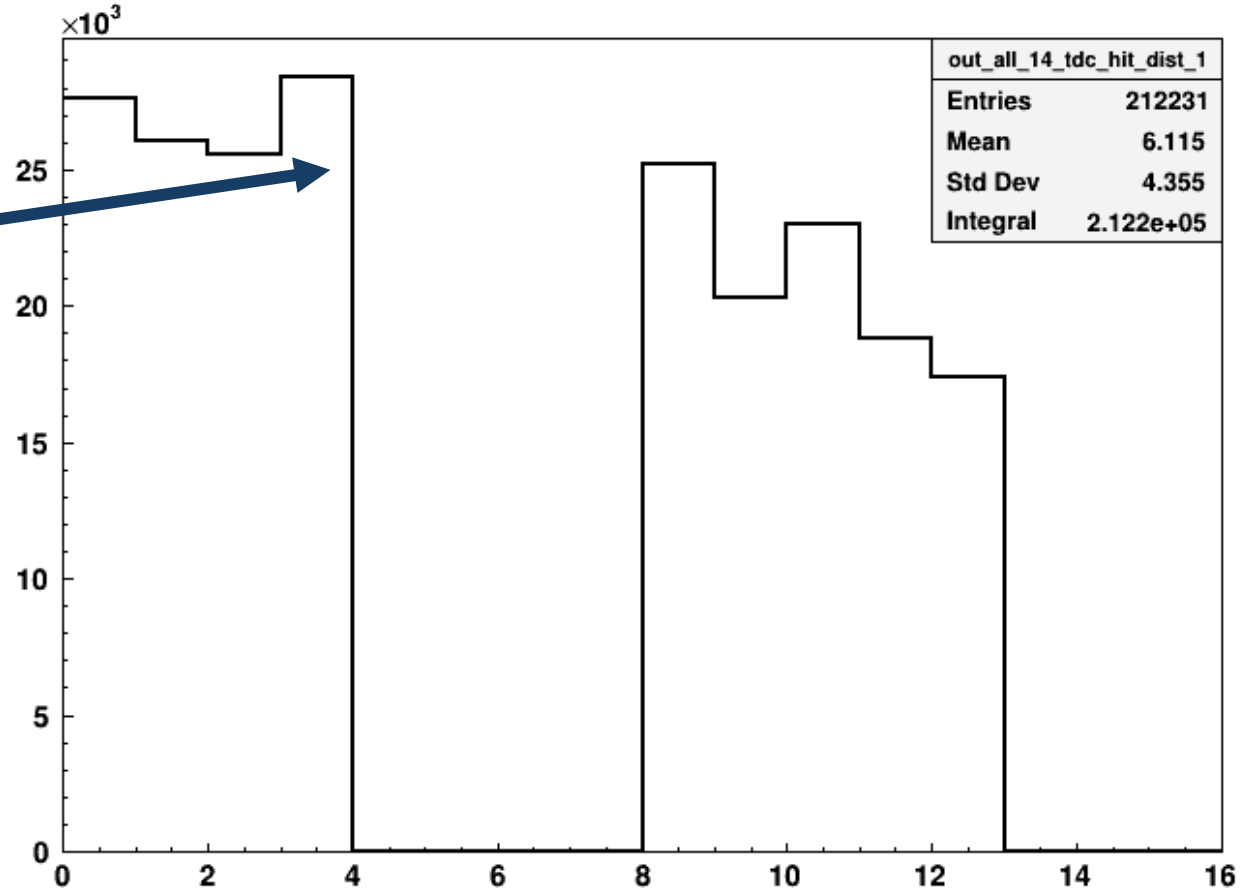
→ to much signal for photomulsiplier

→ nothing detected

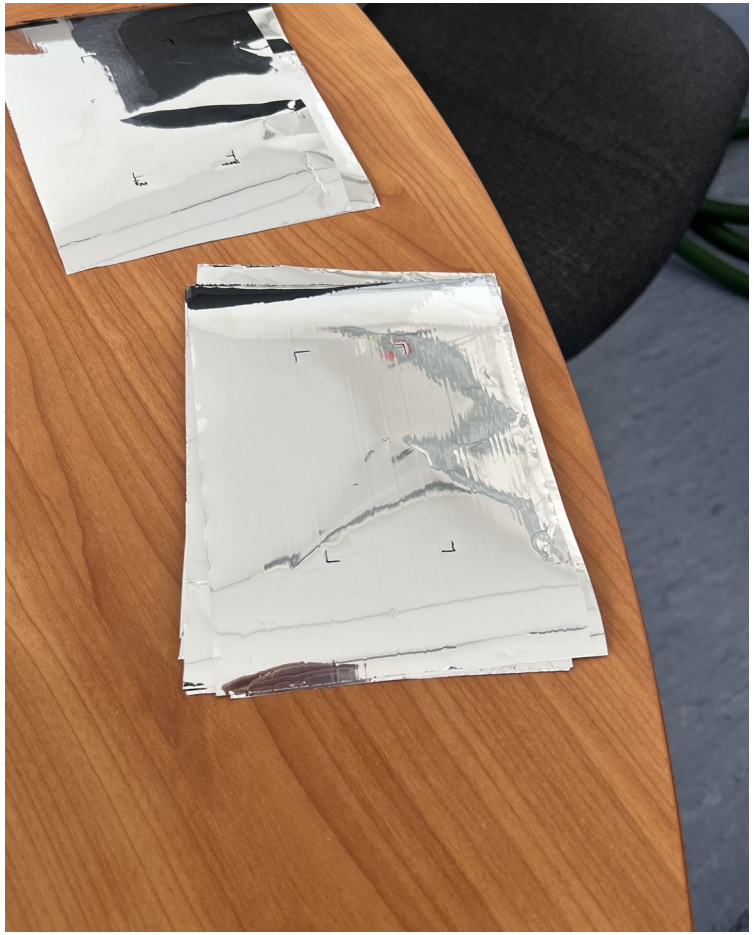
Leak at Scintillator

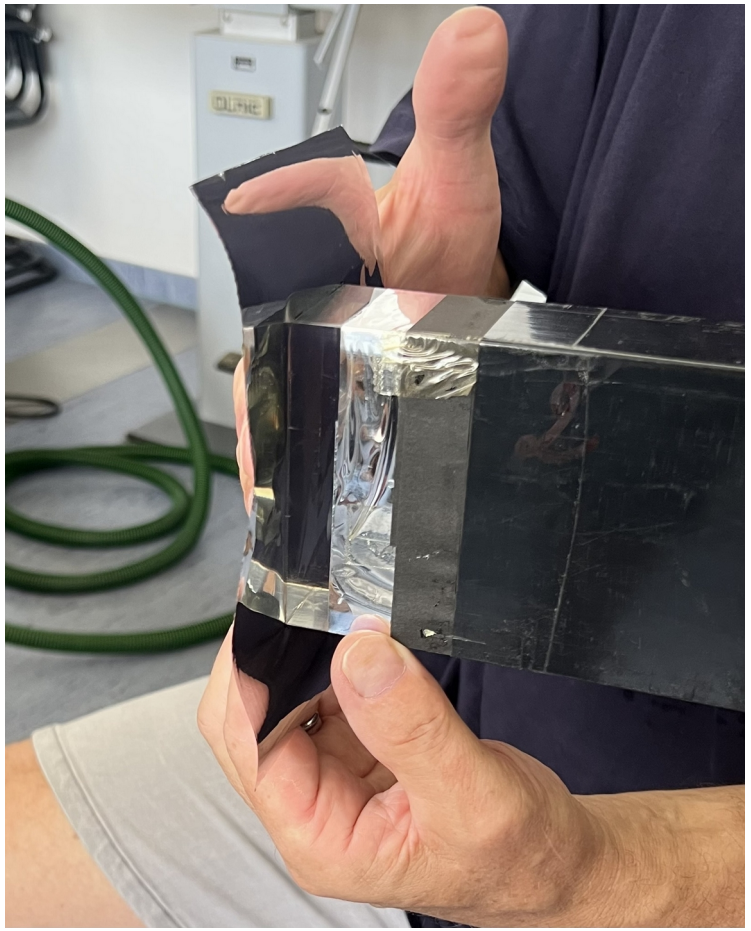
to high

small leak



Assembling the Scintillators





Assembling the Scintillators