

# d-stilbene

## scintillatore per reazioni (n, $\gamma$ ) in sistituzione dei C<sub>6</sub>D<sub>6</sub>?

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& spanish crew (data analysis by Javier Balibres)

Alcune attività 2022

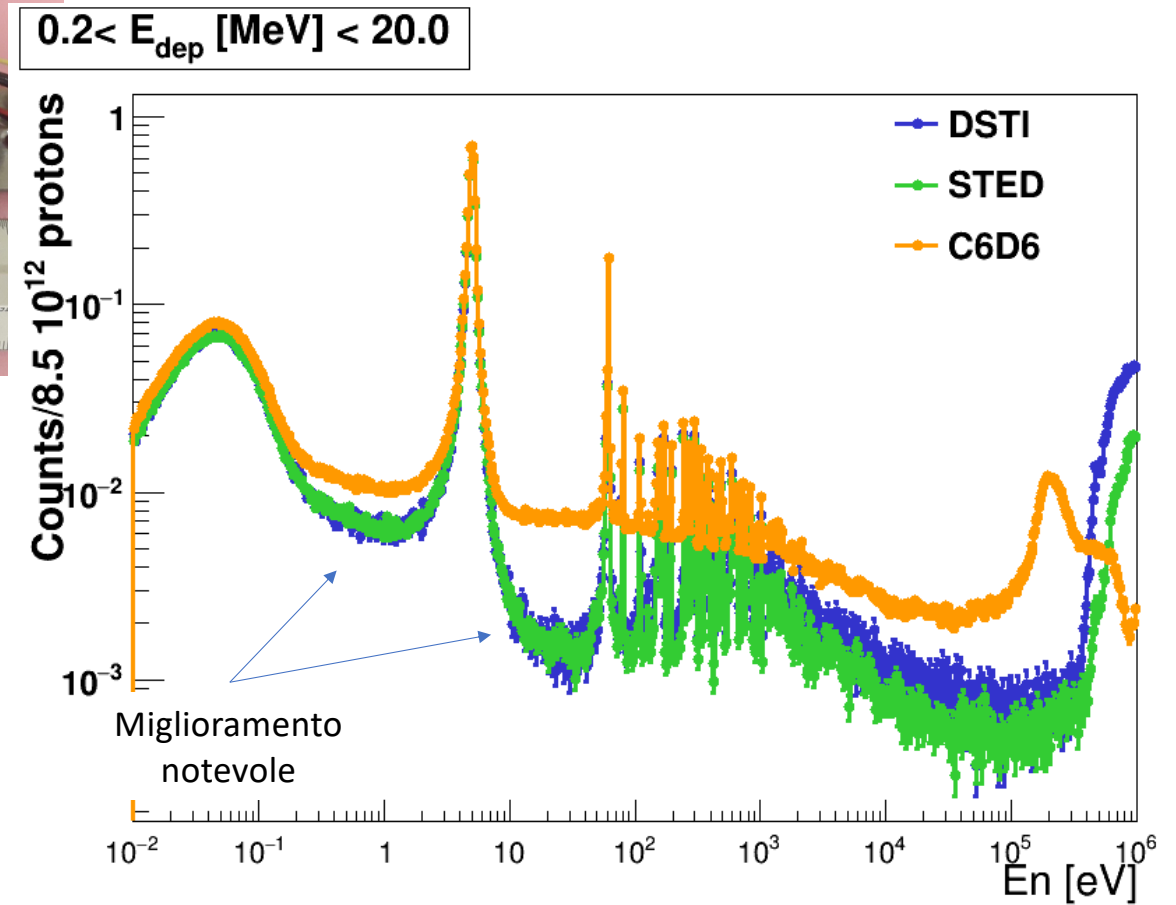
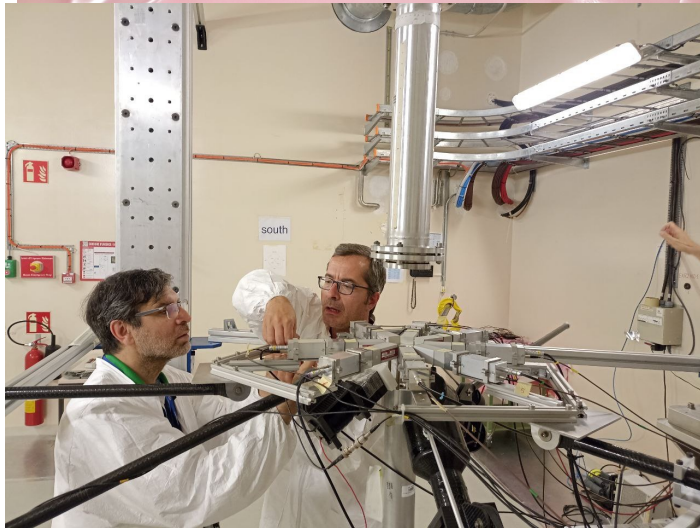
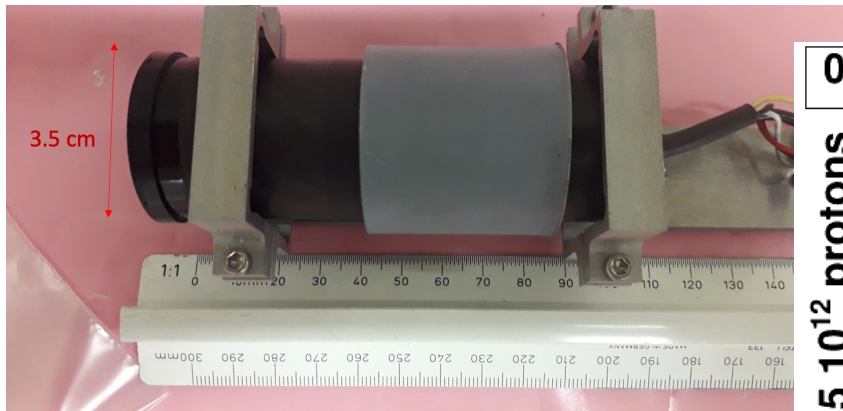
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sTED =  $C_6D_6$   
segmentato



# Alcune attività 2022

# d-stilbene



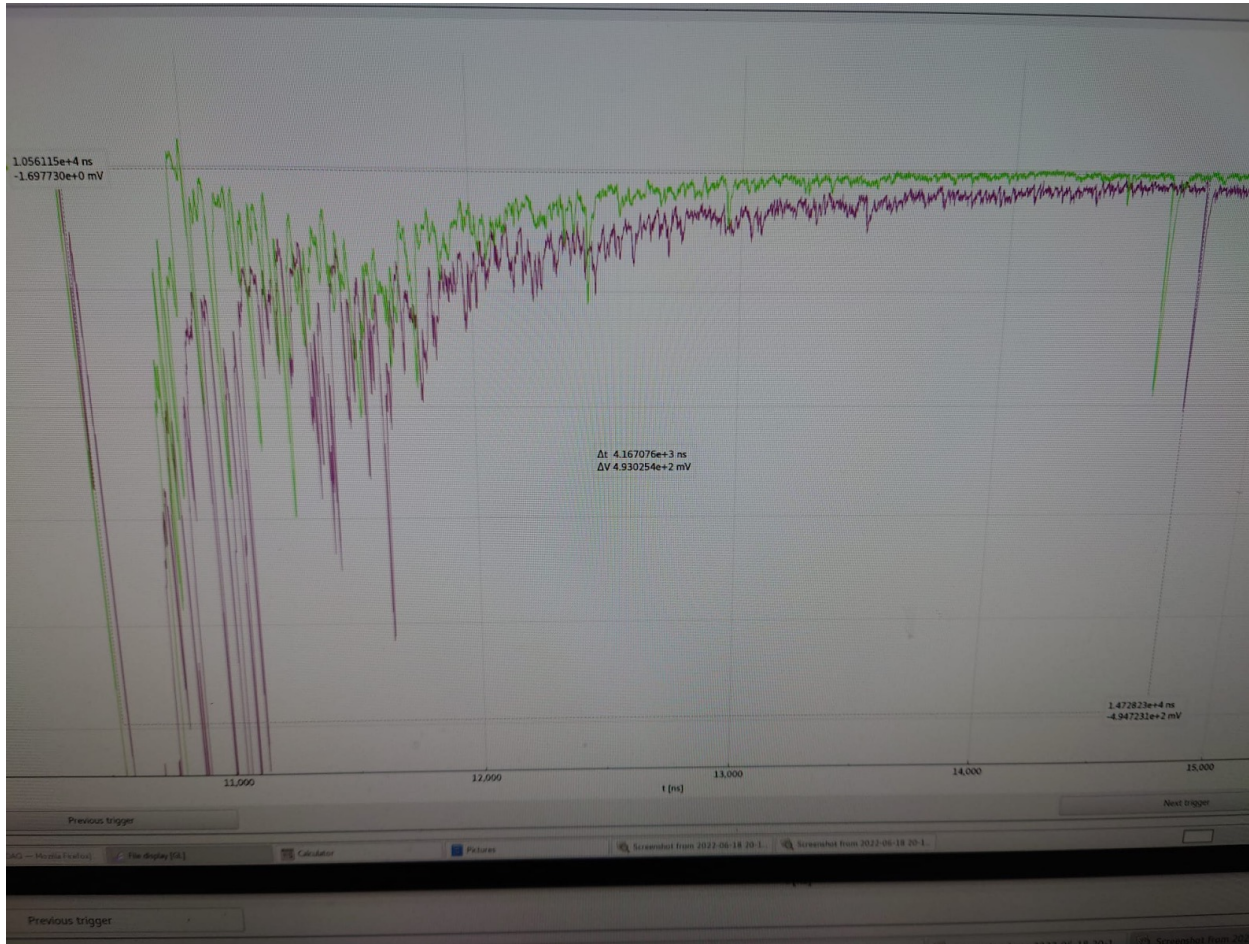
# Alcune attività 2022

# d-stilbene

Response to  $\gamma$ -flasch

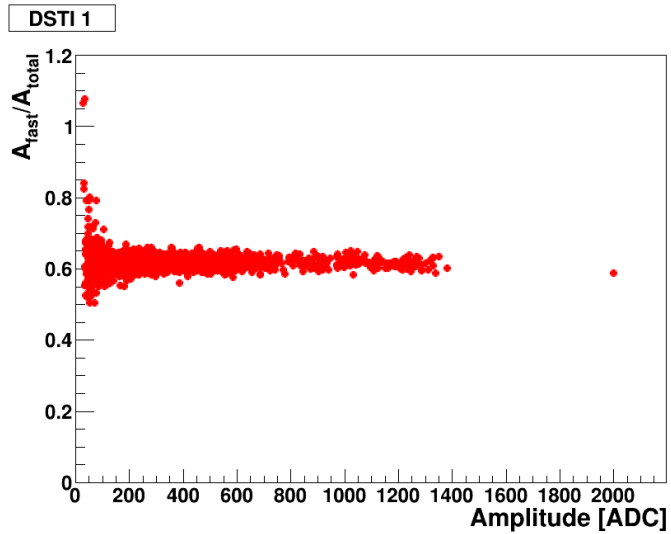
Purple: stilbene-d12

Green: sTED



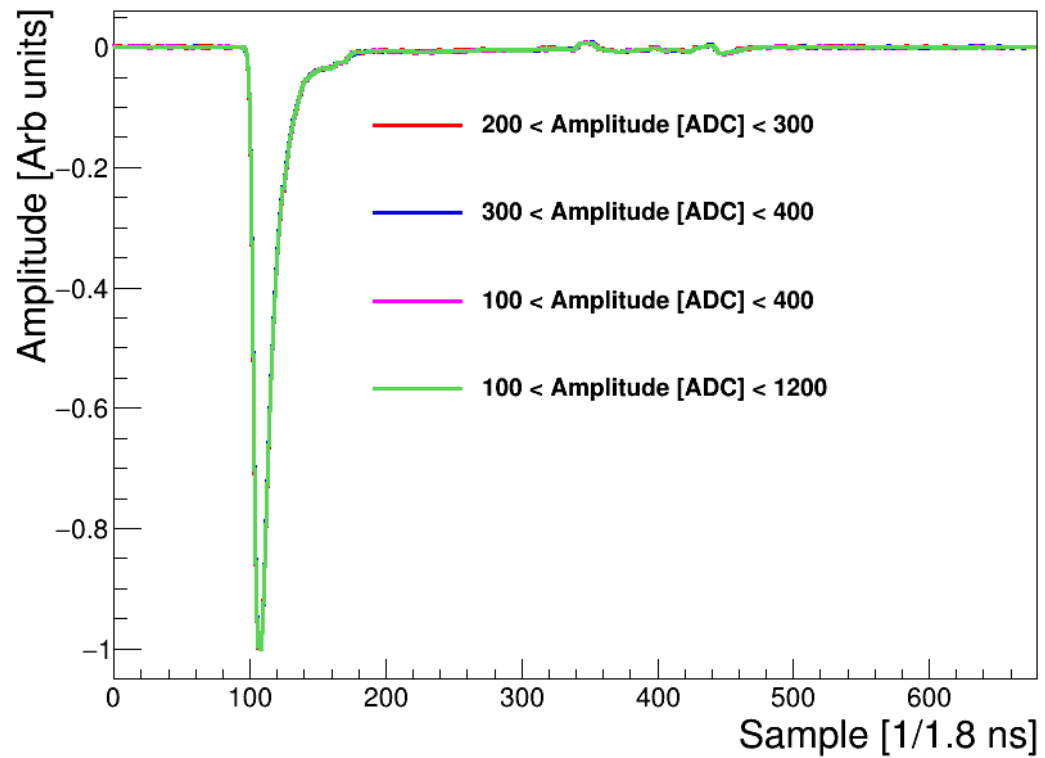
# Alcune attività 2022

# d-stilbene

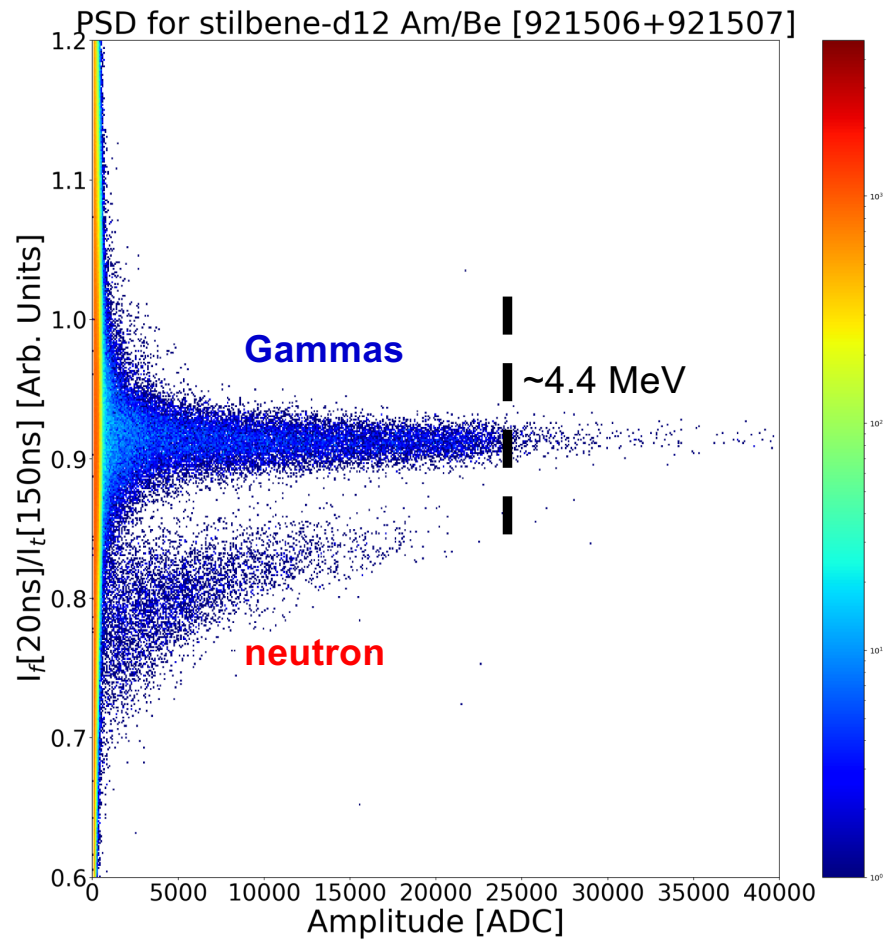


## Pulse shape

STILBENE-D12 1 pulse shapes from  $^{88}\text{Y}$  source



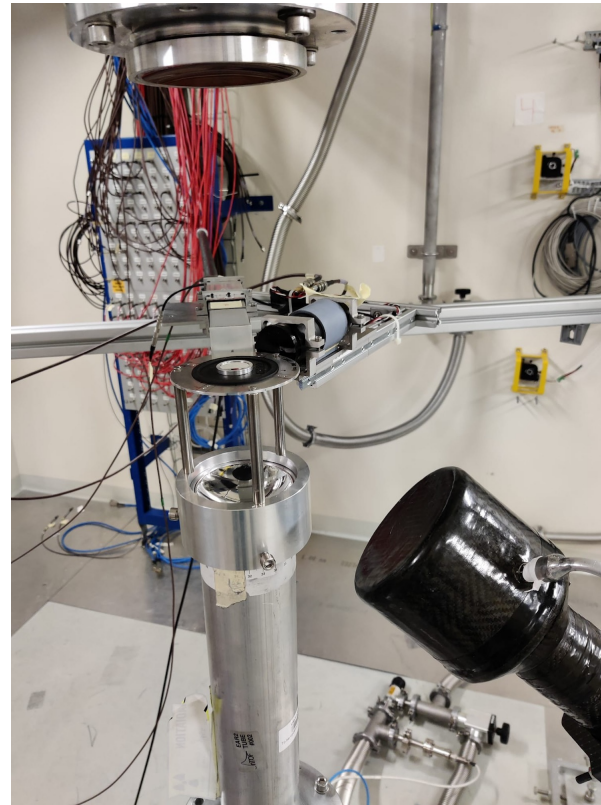
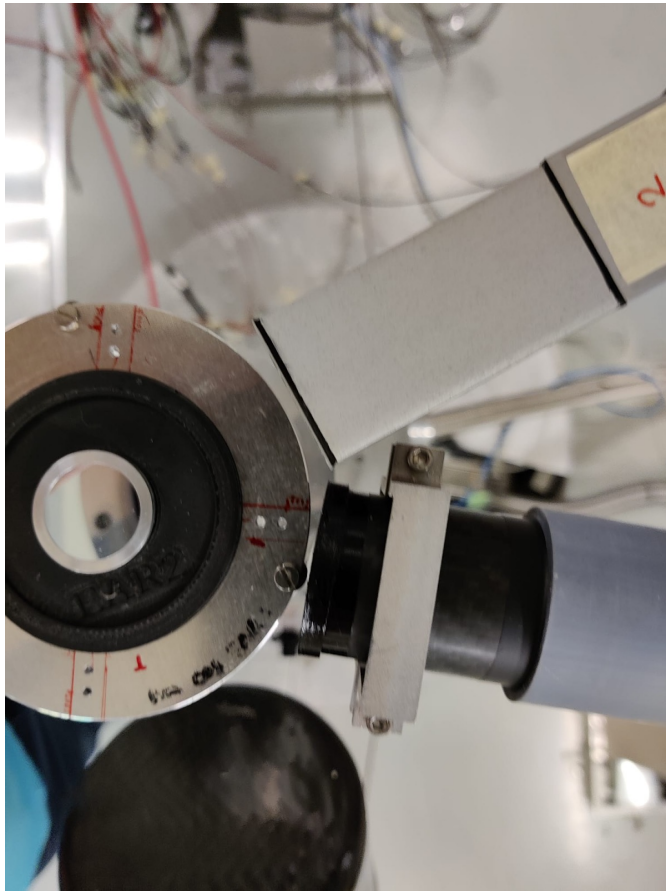
# Alcune attività 2022



# d-stilbene

Pulse shape  
&  
n/ $\gamma$  discrimination

## Alcune attività 2022



## d-stilbene

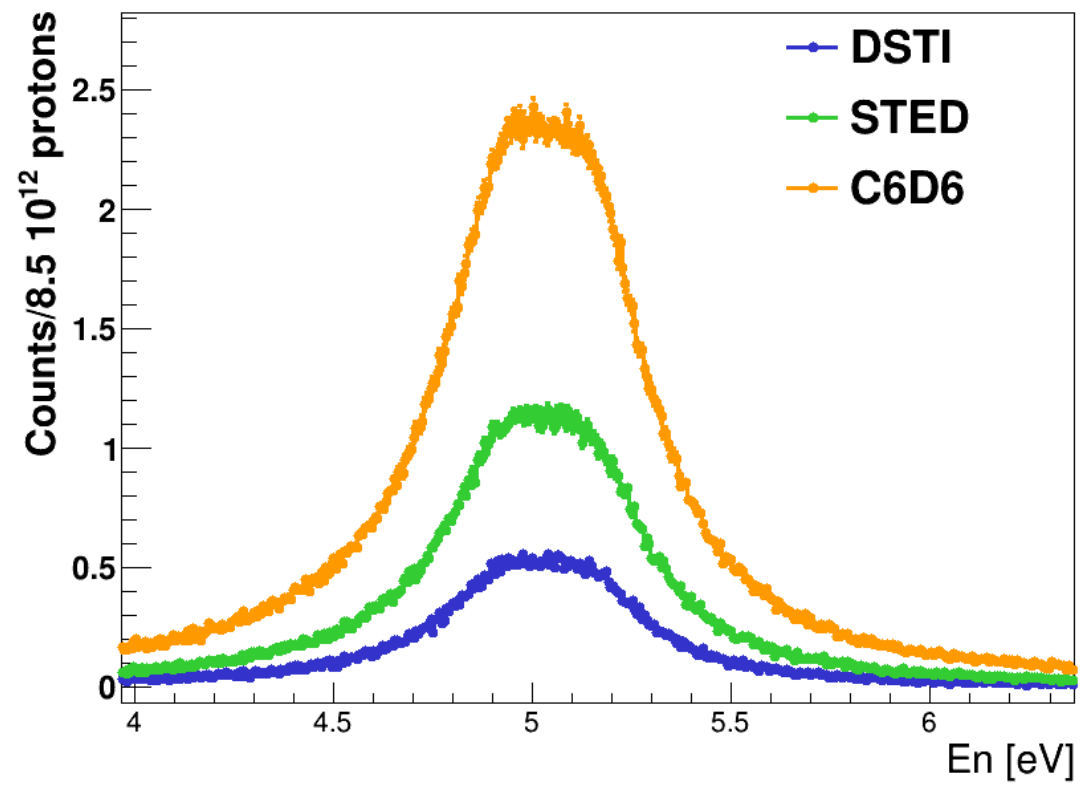
Measurement  
n+  $^{197}\text{Au}$

- sTED 1mm from ring.
- d-stilbene 1 mm from ring.
- C6D6 16 cm

# Alcune attività 2022

# d-stilbene

$0.2 < E_{\text{dep}} [\text{MeV}] < 20.0$



**Measurement  
n+ <sup>197</sup>Au**

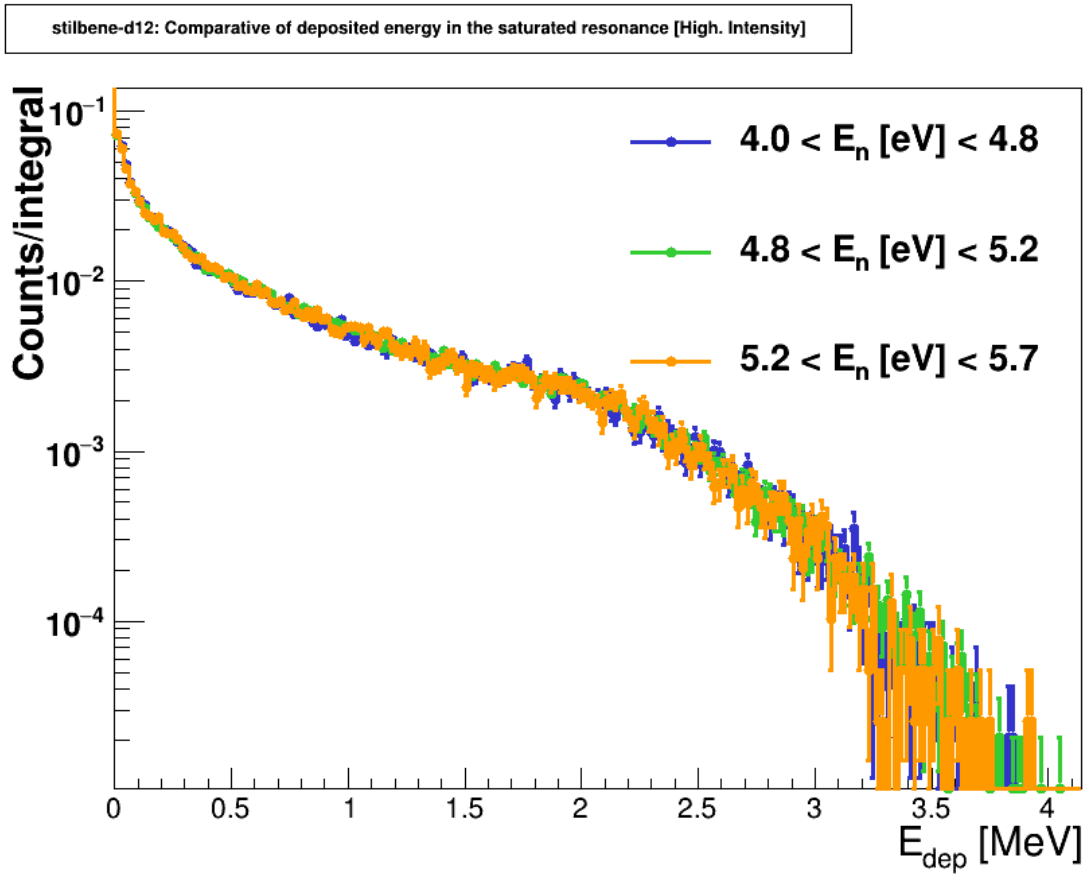
Detector	Efficiency ratio
C6D6	1
sTED	0.4647
stilbene-d12	0.2248

d-stilbene efficiency  
~ 1/2 s-TED detector

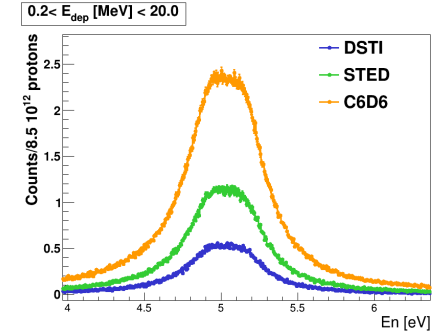


# Alcune attività 2022

# d-stilbene

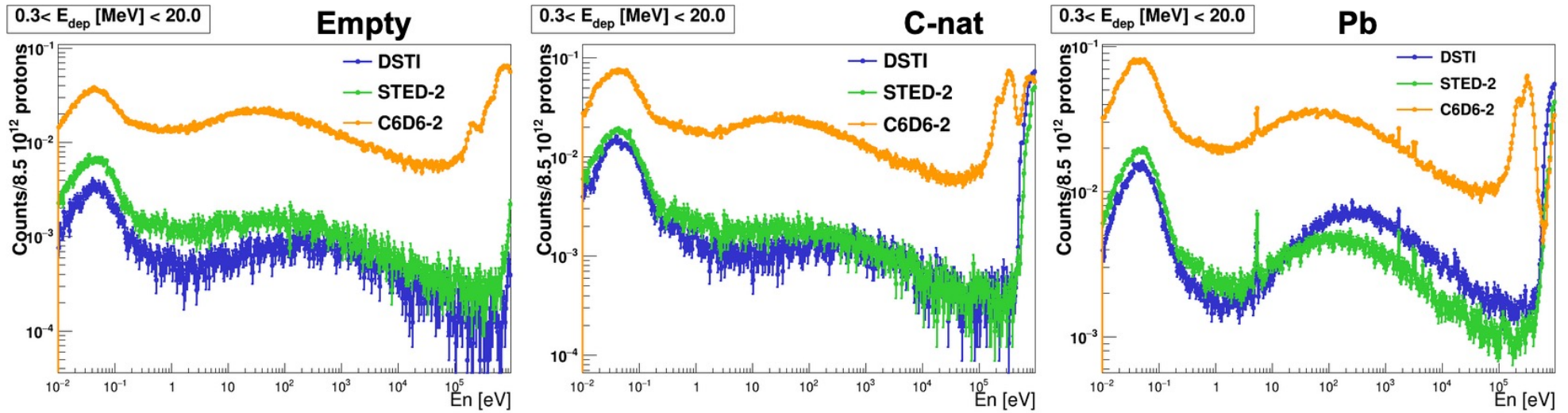


## Measurement $n + {}^{197}\text{Au}$



# Alcune attività 2022

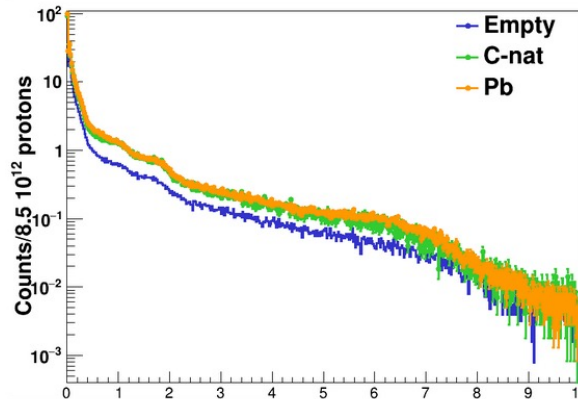
Measurement  
 $n + {}^{197}\text{Au}$   
background



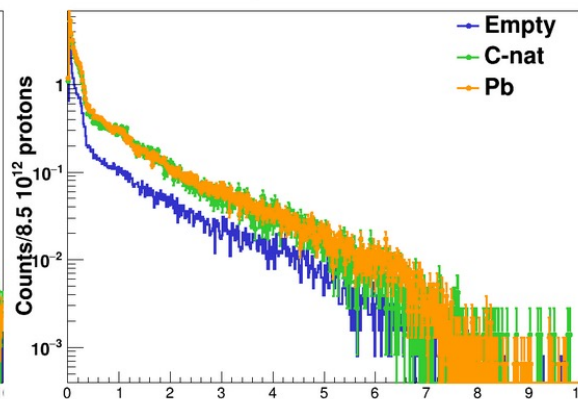
# Alcune attività 2022

Measurement  
 $n + {}^{197}\text{Au}$   
background

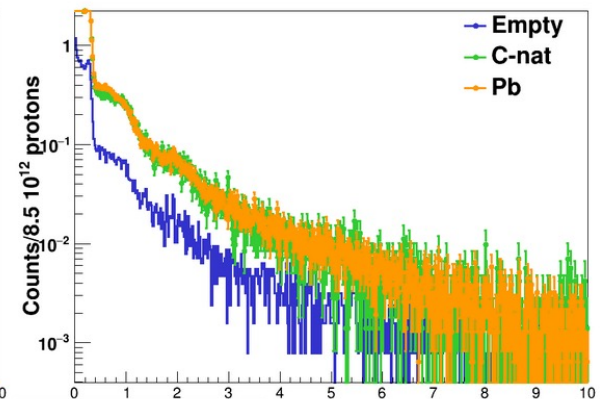
C6D6  $0.0 < E_n [\text{eV}] < 1.0$



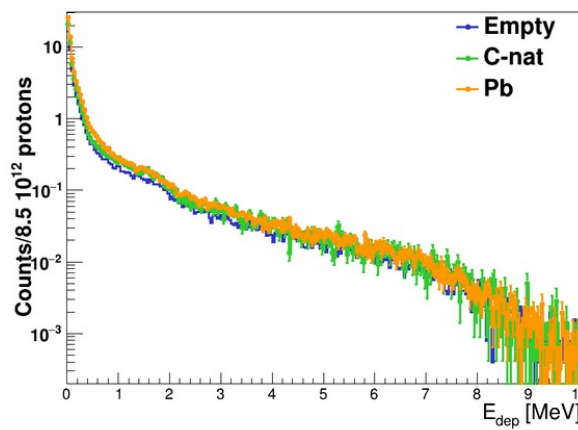
STED  $0.0 < E_n [\text{eV}] < 1.0$



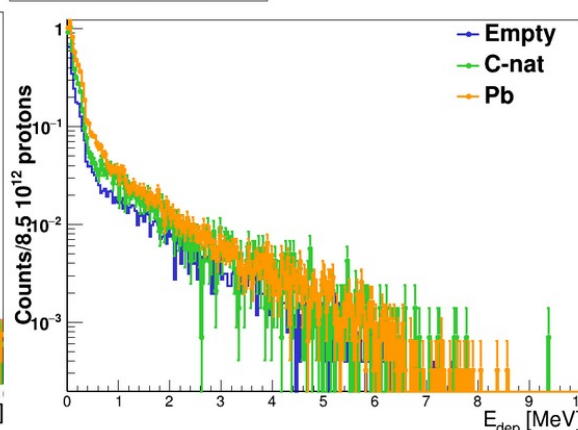
DSTI  $0.0 < E_n [\text{eV}] < 1.0$



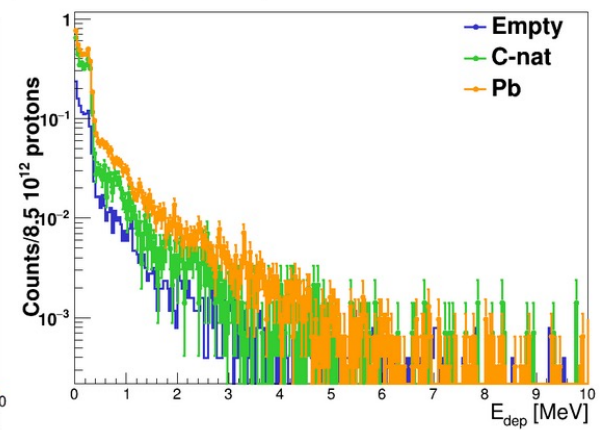
C6D6  $1.0 < E_n [\text{eV}] < 10.0$



STED  $1.0 < E_n [\text{eV}] < 10.0$



DSTI  $1.0 < E_n [\text{eV}] < 10.0$



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- Stilbene deuterato: discriminazione  $n/\gamma$ , veloce, non presenta problemi di sicurezza (al contrario del  $C_6D_6$ )
- 1° test su fascio molto promettente, ma necessità di aumentare l'efficienza (serve un volume di stilbene maggiore)
- 2° test in corso