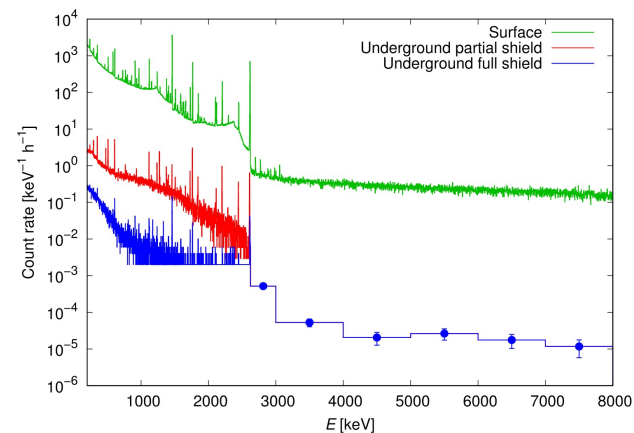
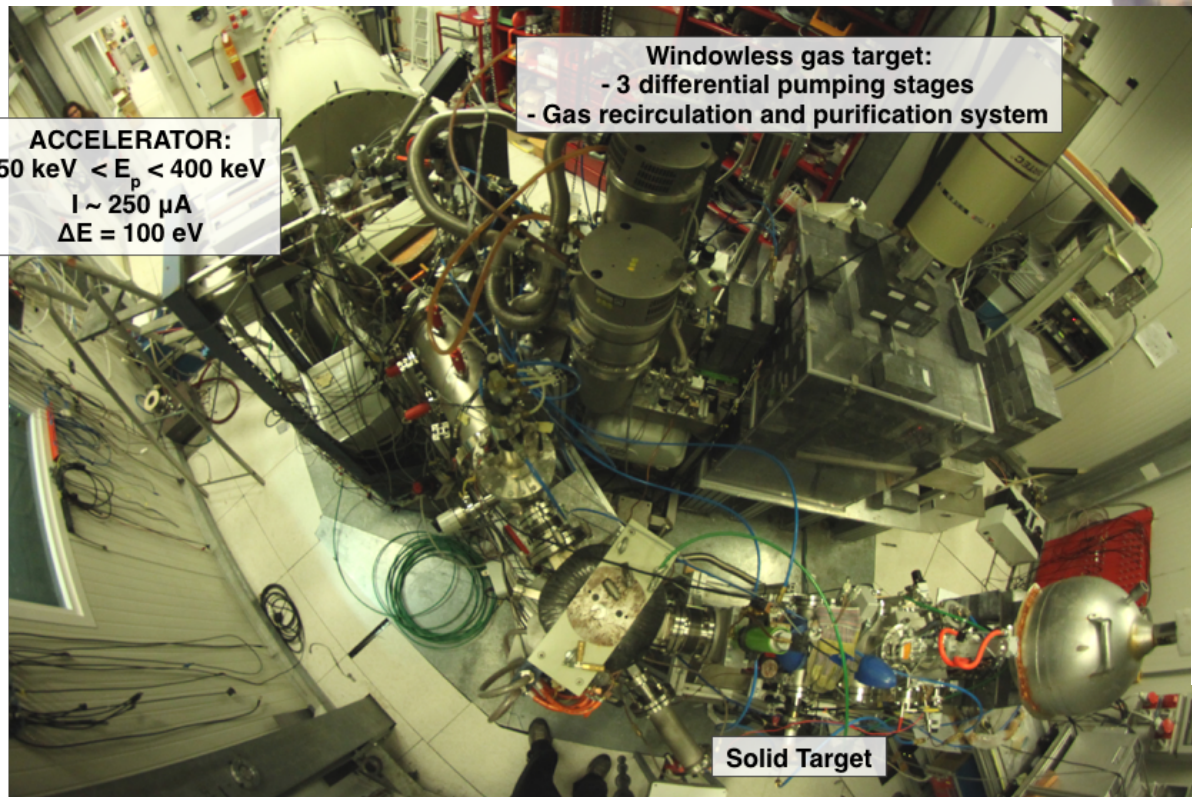
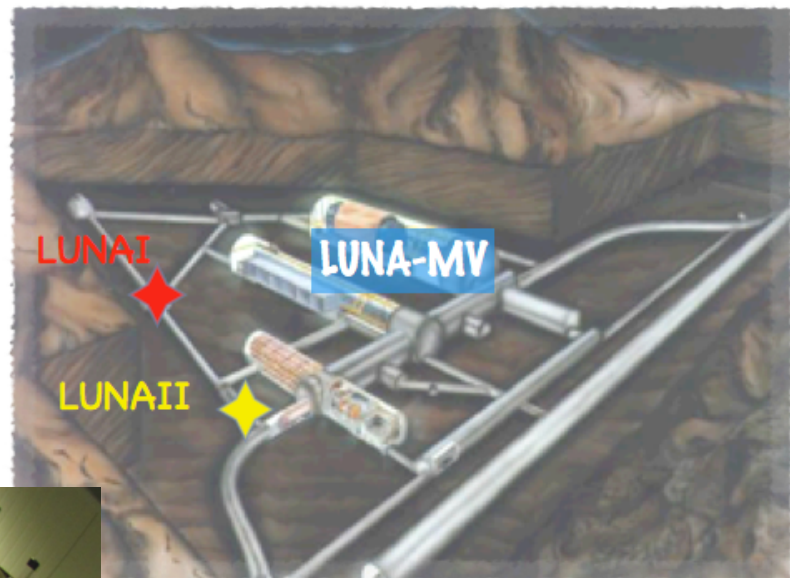


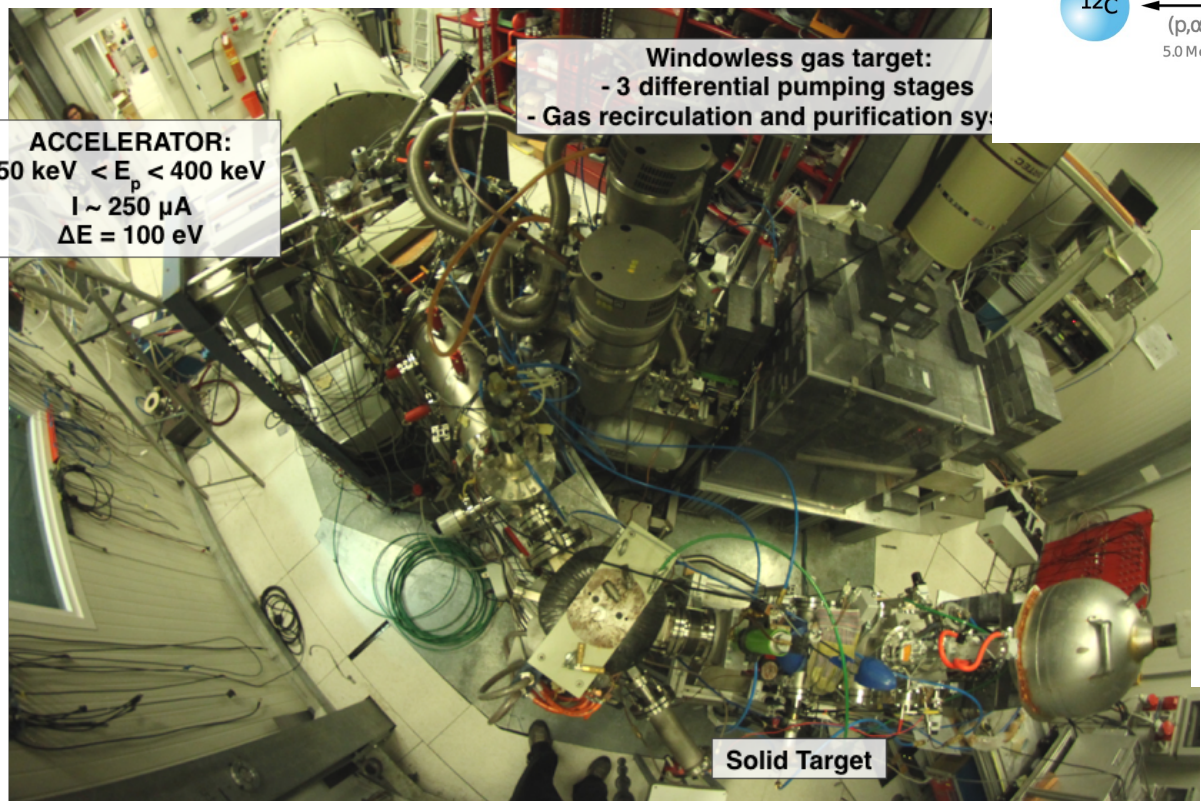
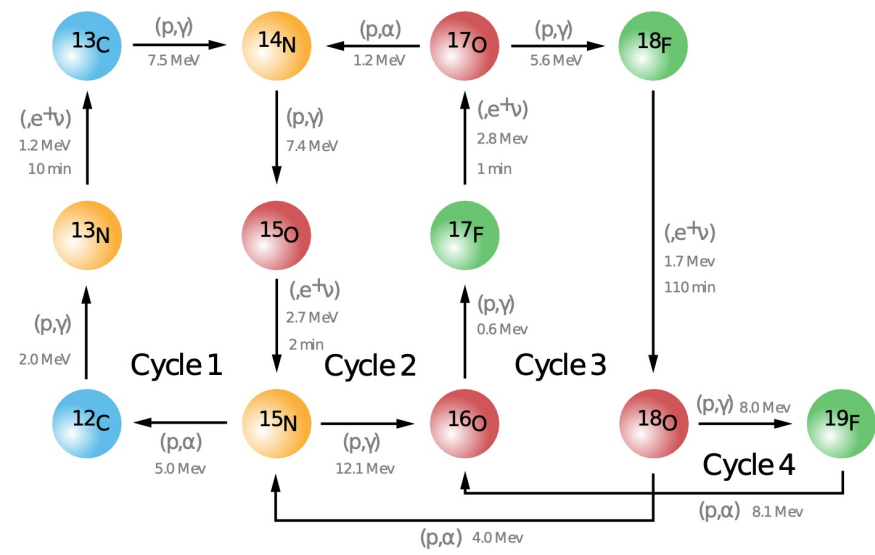
LUNA @ LNGS



<https://www.pd.infn.it/eng/luna/>

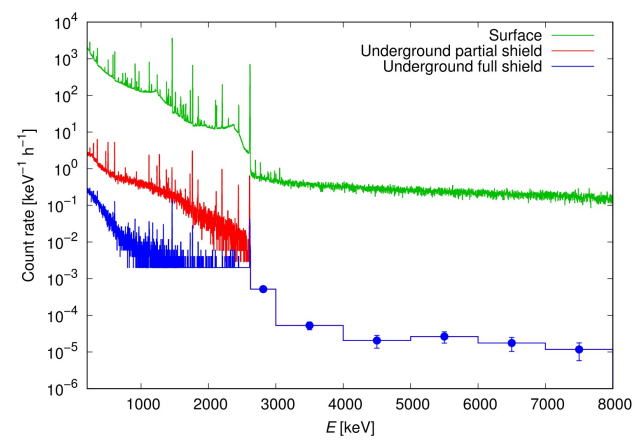


$m(^{12}\text{C}) + m(p) - m(^{13}\text{N}) = 1943 \text{ keV}$



Windowless gas target:
- 3 differential pumping stages
- Gas recirculation and purification sys

ACCELERATOR:
50 keV < E_p < 400 keV
I ~ 250 μA
ΔE = 100 eV



<https://www.pd.infn.it/eng/luna/>



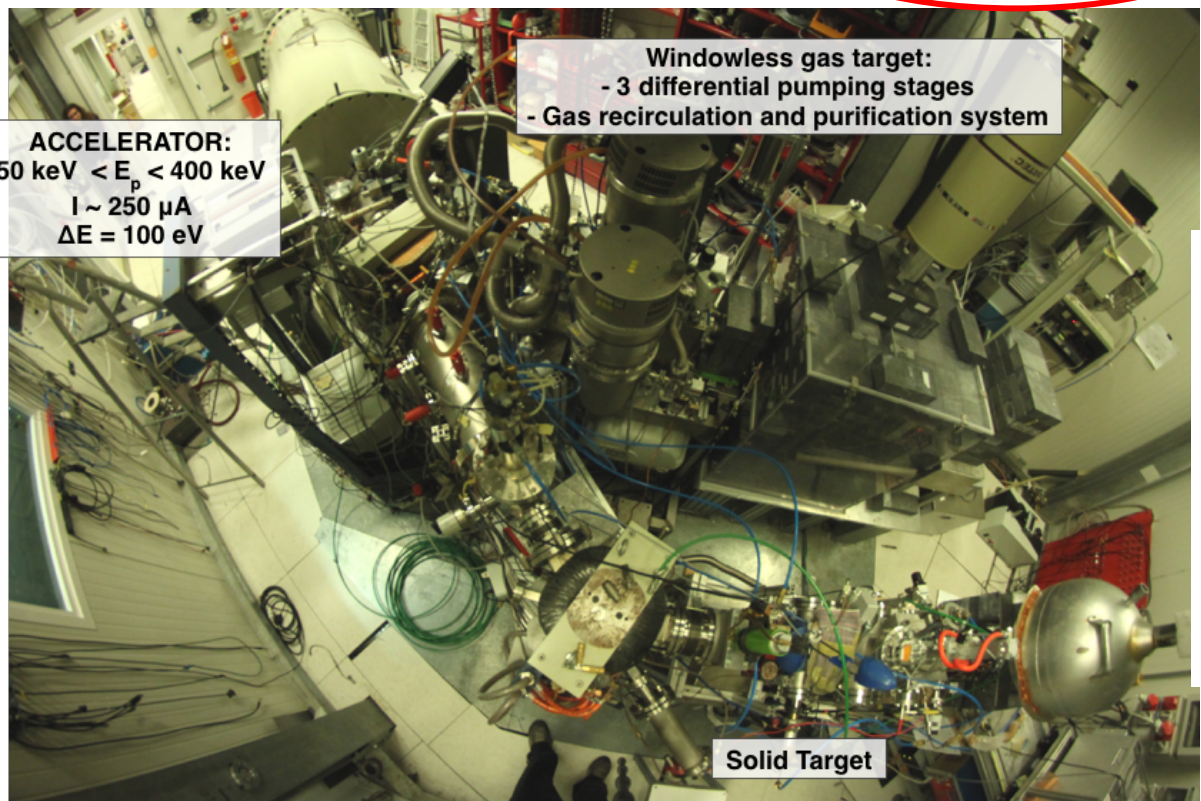
$$m(^{12}\text{C}) + m(p) - m(^{13}\text{N}) = 1943 \text{ keV}$$



$$E_{\text{acc}} + m(^{12}\text{C}) + m(p) - m(^{13}\text{N}) = 1943 \text{ keV} + E_{\text{acc}}$$



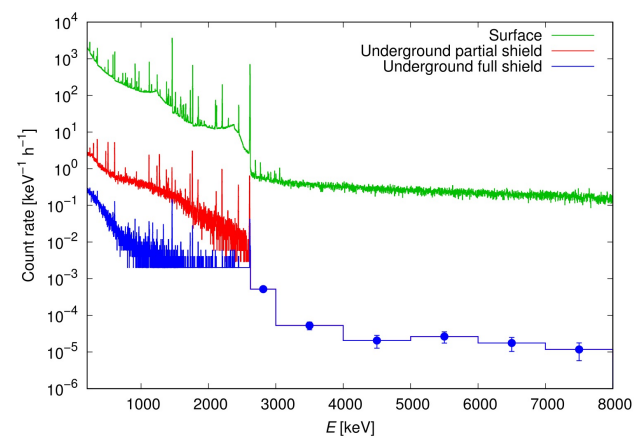
Dove va tutta questa energia?????



Windowless gas target:
- 3 differential pumping stages
- Gas recirculation and purification system

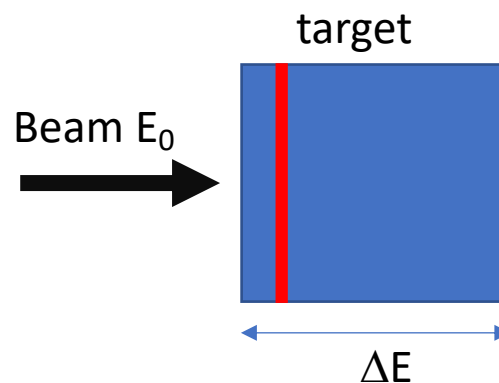
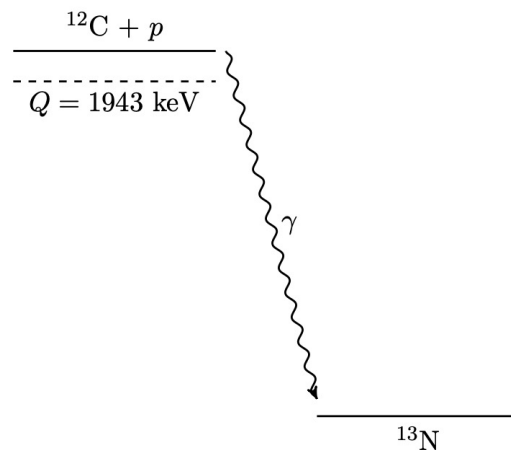
ACCELERATOR:
50 keV < E_p < 400 keV
I ~ 250 μA
ΔE = 100 eV

Solid Target



<https://www.pd.infn.it/eng/luna/>

LUNA @ LNGS

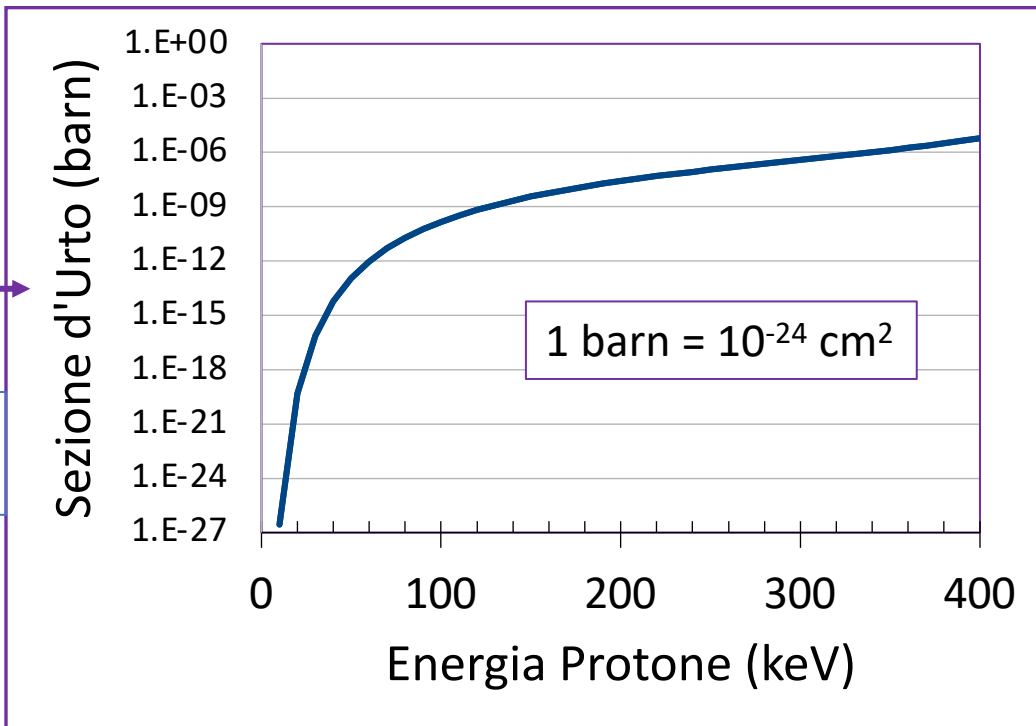


$$N_{\text{reazioni}} = N_p \times N_C \times \sigma$$

$N_{\text{gamma}} / \text{efficienza}$

Numero atomi carbonio per unità di superficie

Numero protoni $10^{18} \text{ atomi/cm}^2$
 10^{15} p/s



EFFICIENZA

Scende con l'energia del gamma (dipende dal tipo di rivelatore utilizzato)
Scende anche allontanando il rivelatore dal bersaglio (dipende dalla geometria)

