Study of the $^2H(p, \gamma)^3He$ reaction in the Big Bang Nucleosynthesis energy range at LUNA
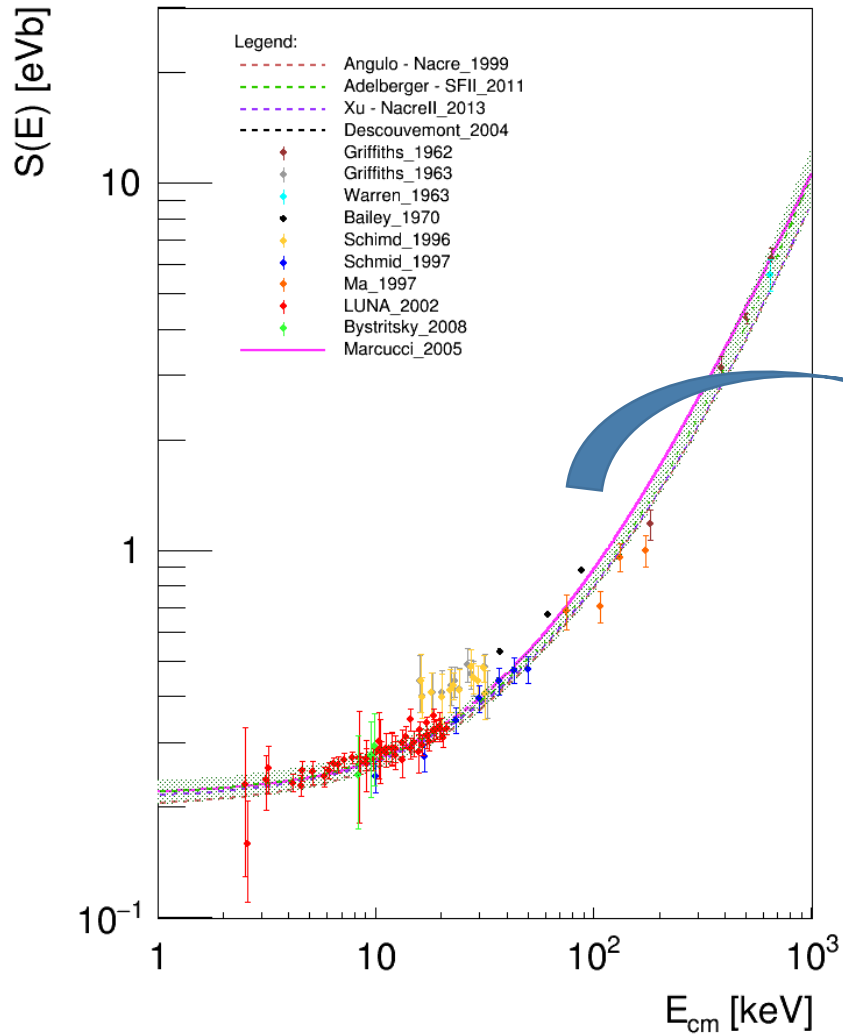
V. Mossa (for the LUNA collaboration)

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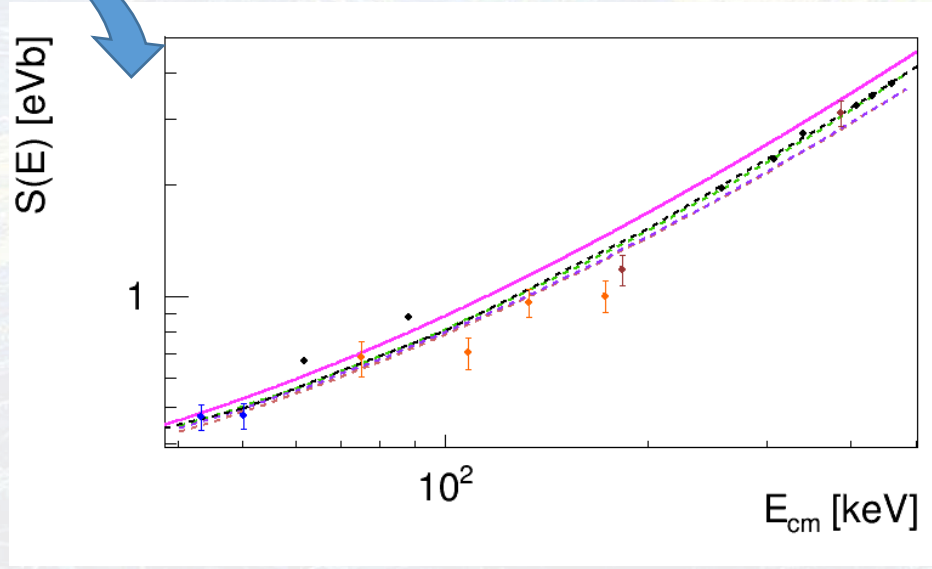**54th International Winter Meeting on Nuclear Physics**,
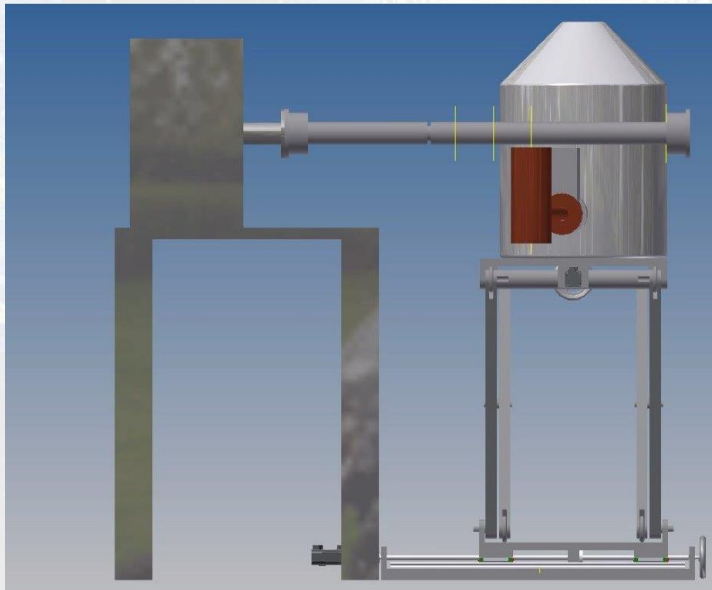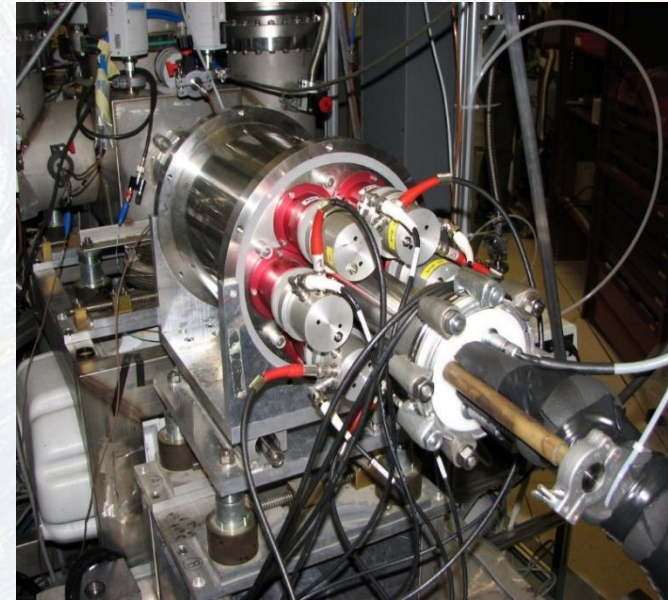25-29 January 2016 – Bormio (Italy)

Experimental data

Best fit

Theoretical predicition

Experimental procedure

I phase: the BGO phase

- $E_{beam} \sim 40 - 400 \; keV$

- 4π geometry → no ang. distr.sensitivity → no differential σ

- Energy resolution in the total absorption peak $\sim 8\%$

- High detection efficiency for 5.5 MeV γ-rays $\sim 70\%$ →low energy measurements

II phase: the HPGe phase

- $E_{beam} \sim 150 - 400 \; keV$

- Good energy resolution in the total absorption peak $\sim 0,08\%$ → differential σ measurements

- Integrated detection efficiency for 5.5 MeV γ-rays $\sim 0,35\%$ → no low energy measurements

Thanks for your attention!

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