

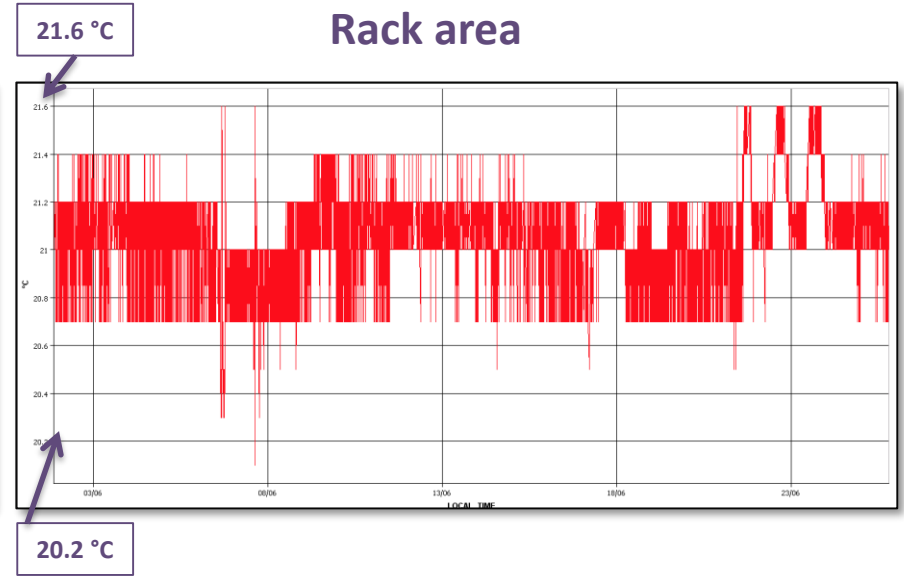
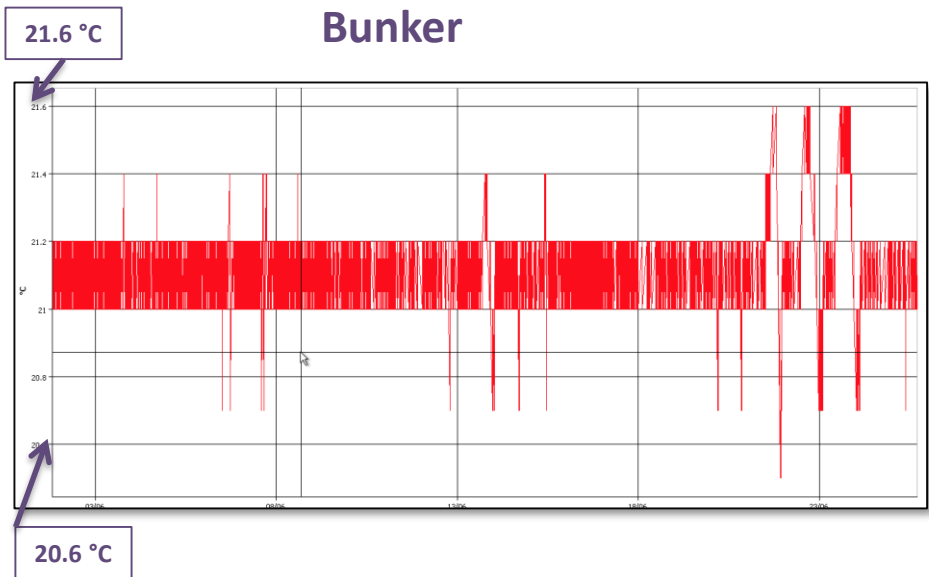
n_TOF Report

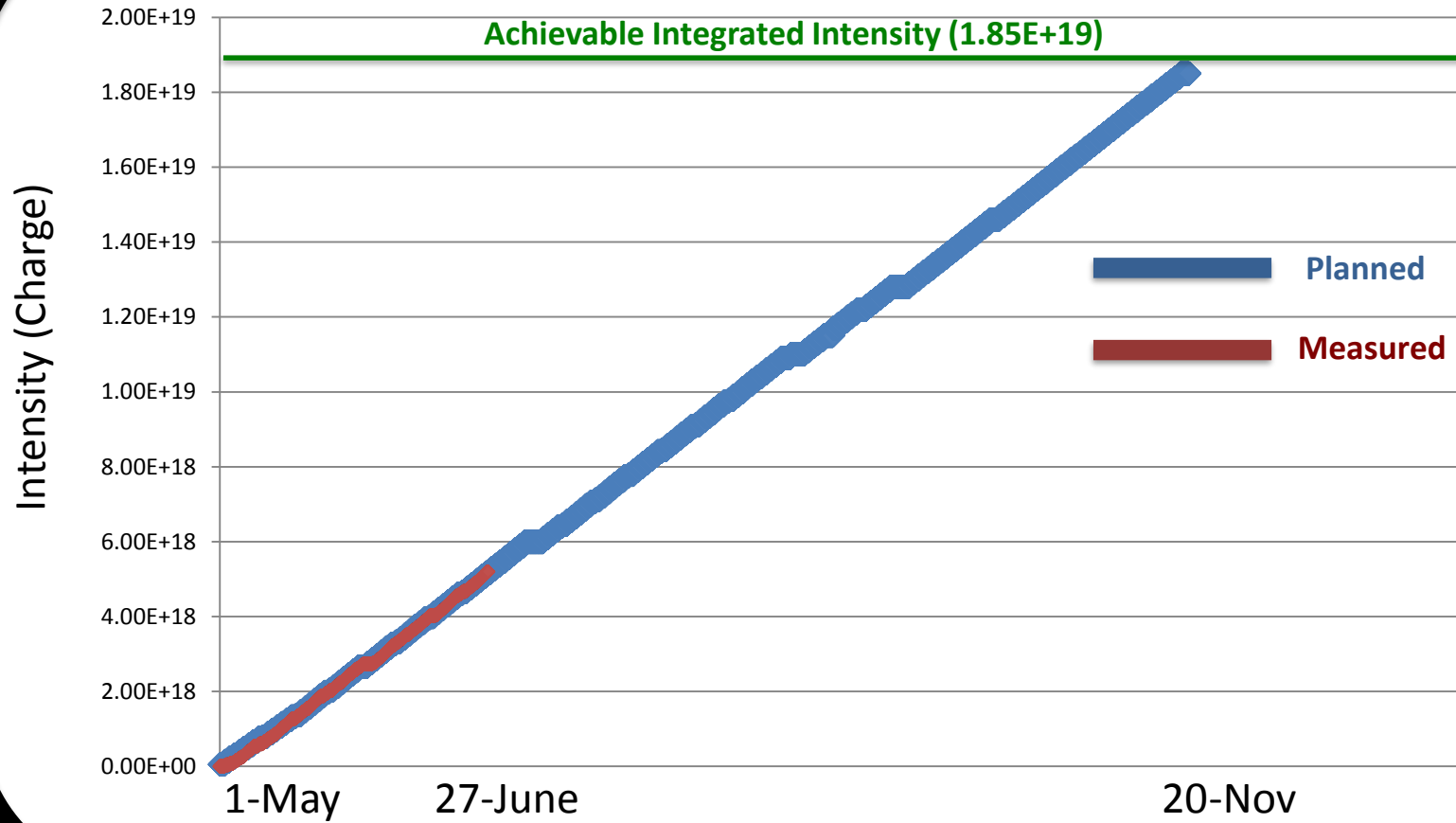
Daniela Macina
n_TOF Run Coordinator
CERN

- Follow up Shutdown Activities
- Proton delivery from PS
- First Operation in 2017
- Conclusions

Safety: SIR course to enter the experimental areas under evaluation by the appropriate bodies. It will be made available in August and will become mandatory by the end of the year

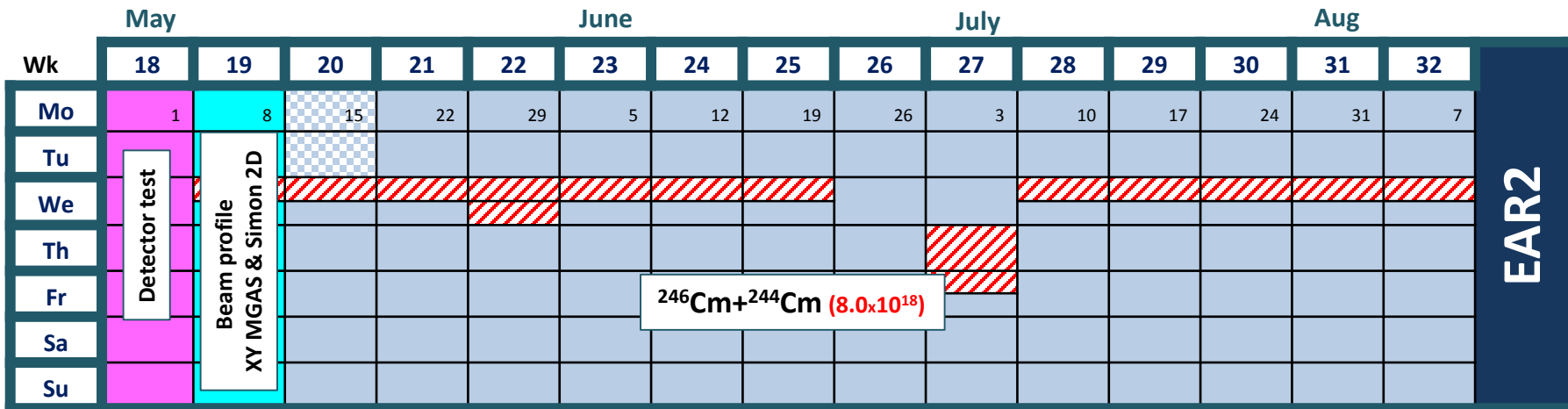
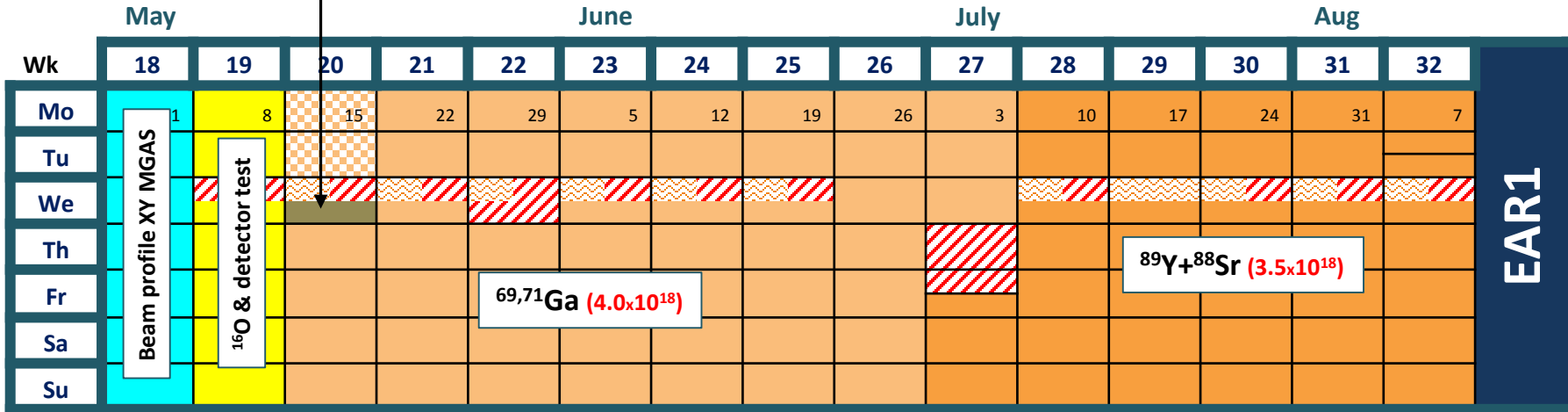
Cooling in EAR2

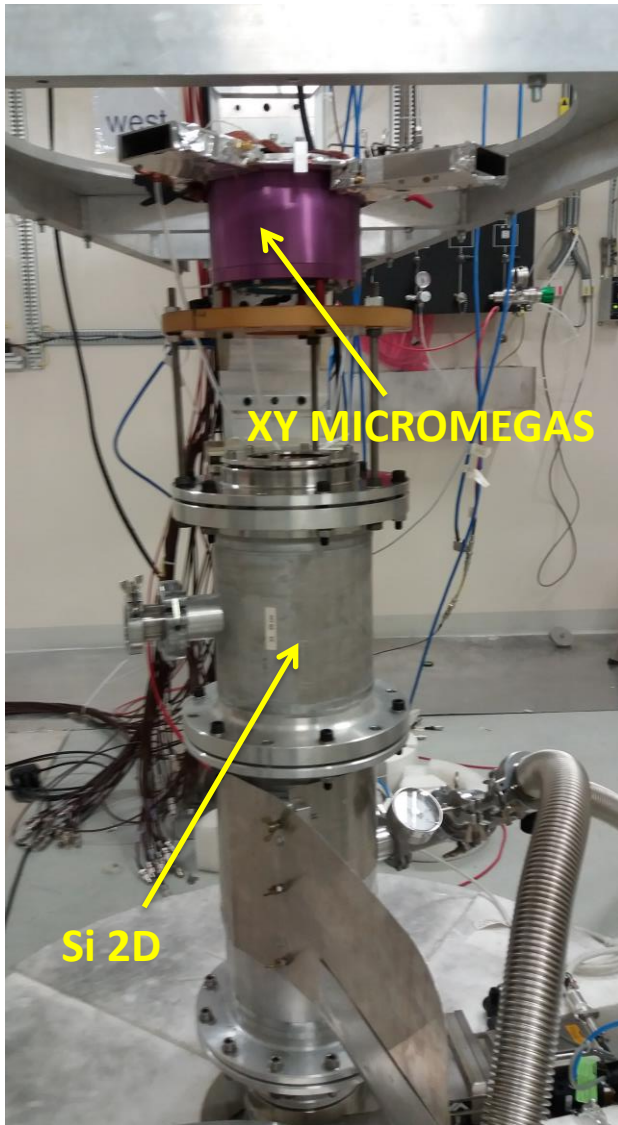




Test magnet & filter box

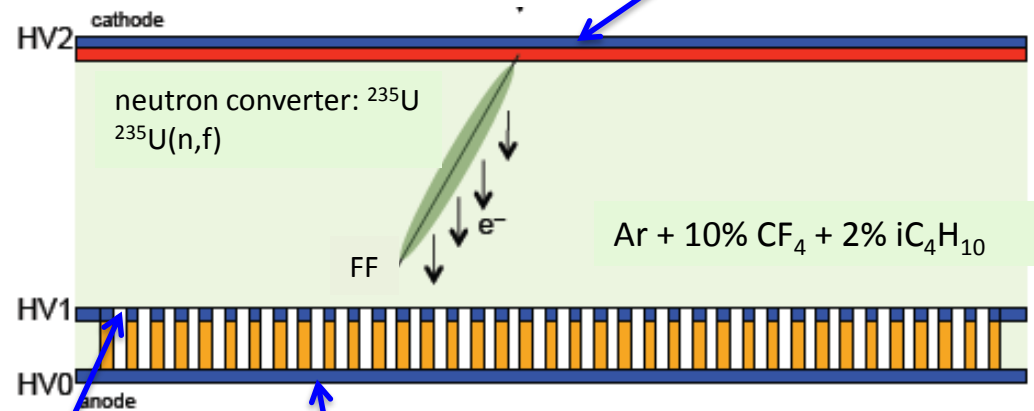
n_TOF Schedule 2017 ver. 1.3





XY MICROMEAS (both mesh and anode segmented into strips)

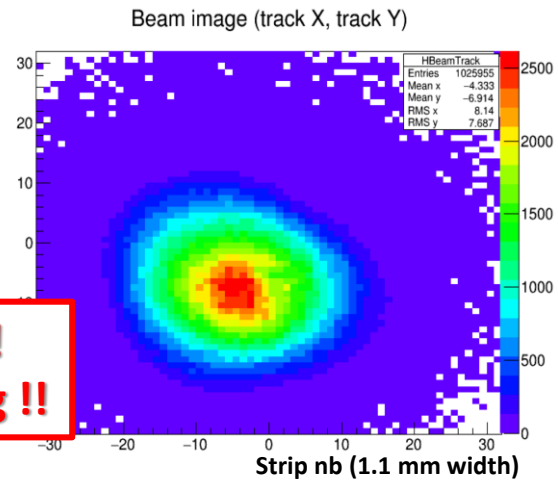
Cathode signal for the fluence extraction



Mesh :
charge+ collection

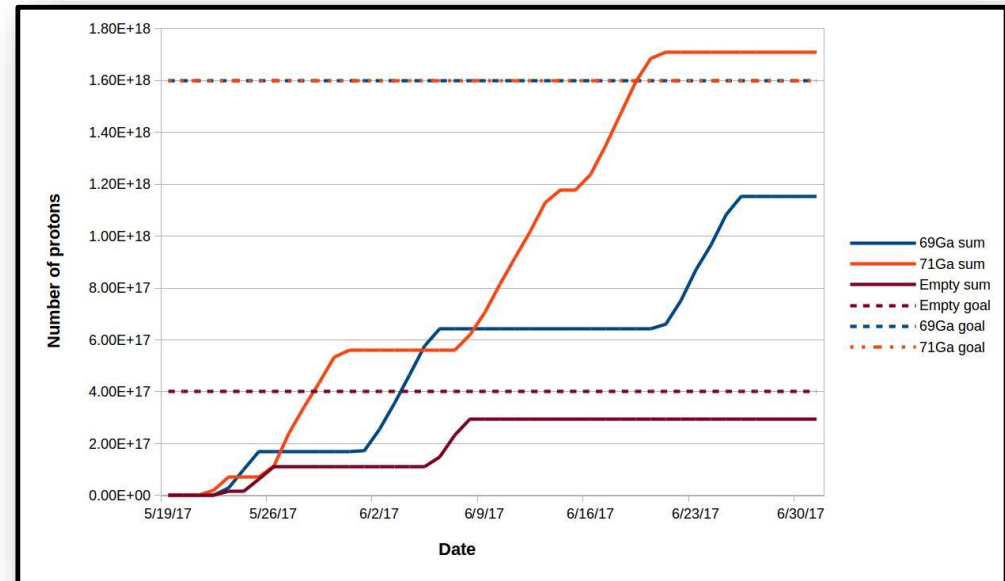
Anode:
charge+ collection

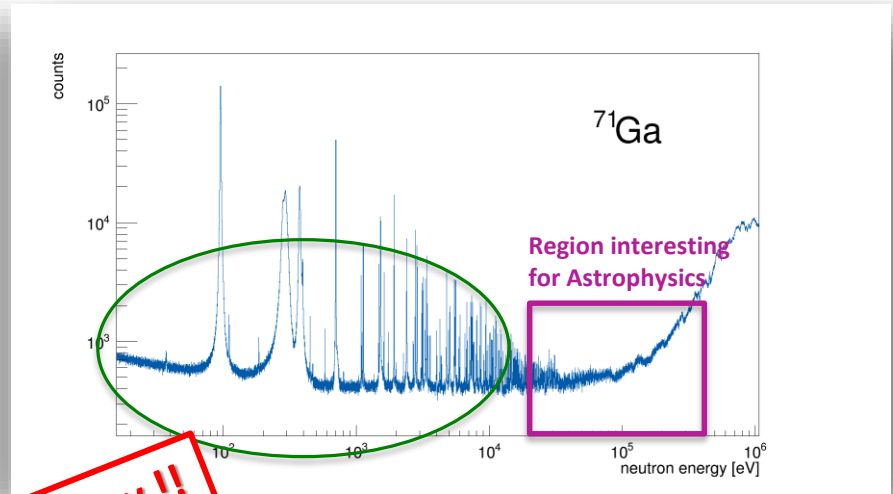
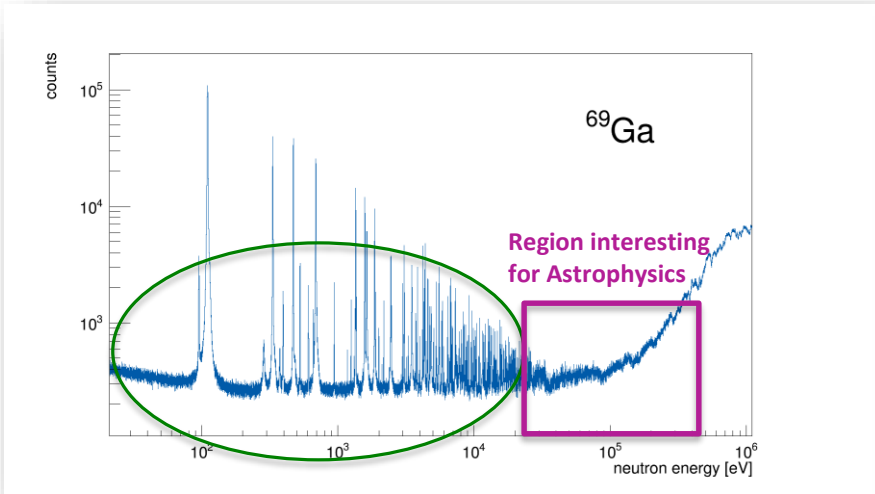
**Very preliminary !
2 days data taking !!**



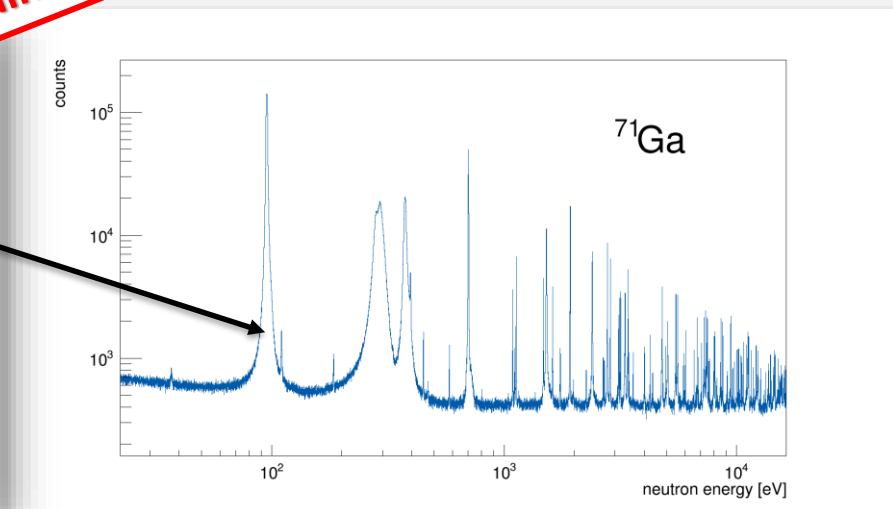
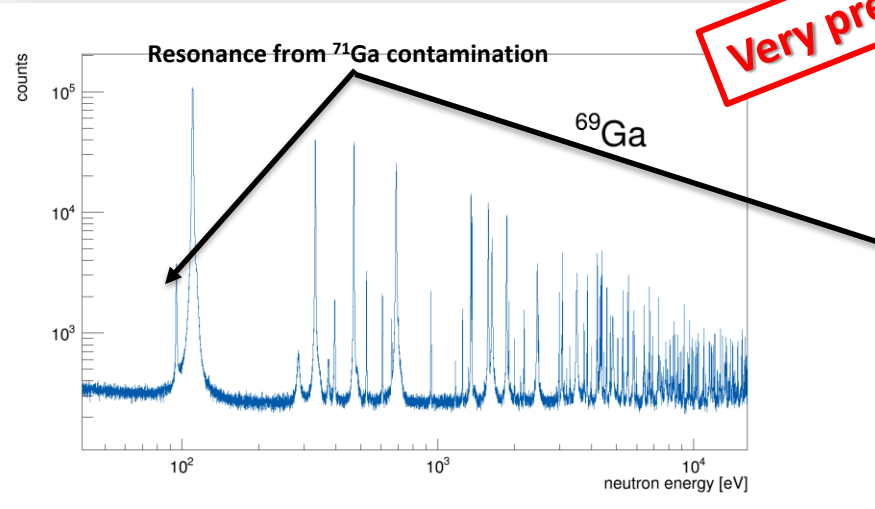


Reactions important for the astrophysical s-process which produces about half of the elements heavier than Fe





Very preliminary !!



Neutron Capture Cross Sections of minor actinides (MAs) and long-lived fission products (LLFPs) are important:

- for improving the performance and safety of our actual reactors,
- for designing new types of reactors & for reducing the high-level radioactive Waste (transmutation)

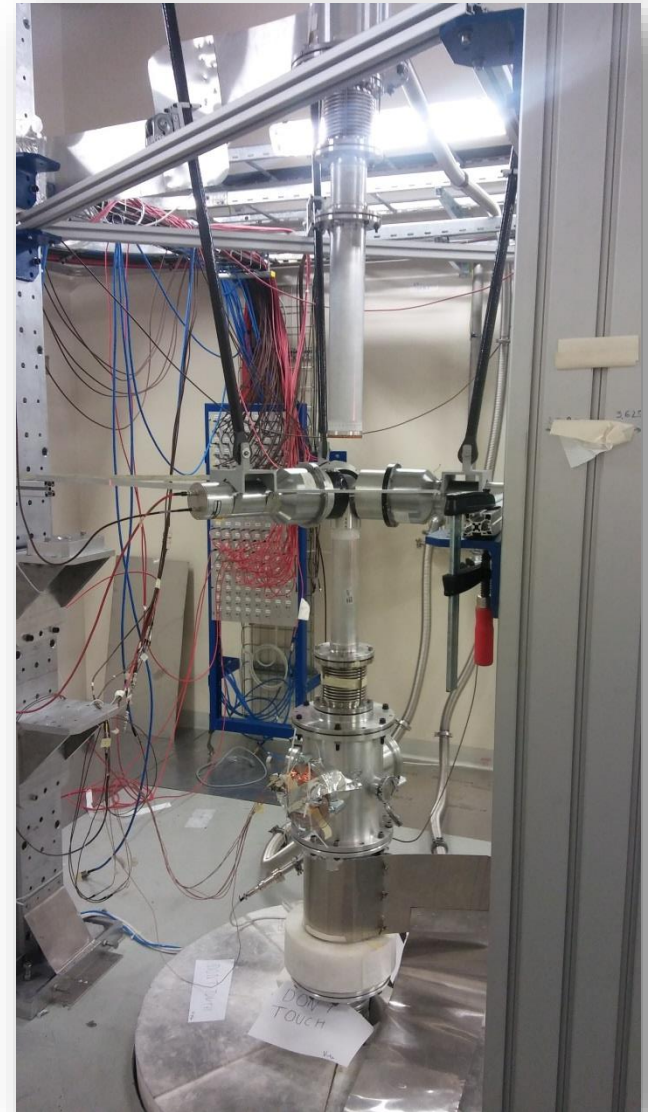
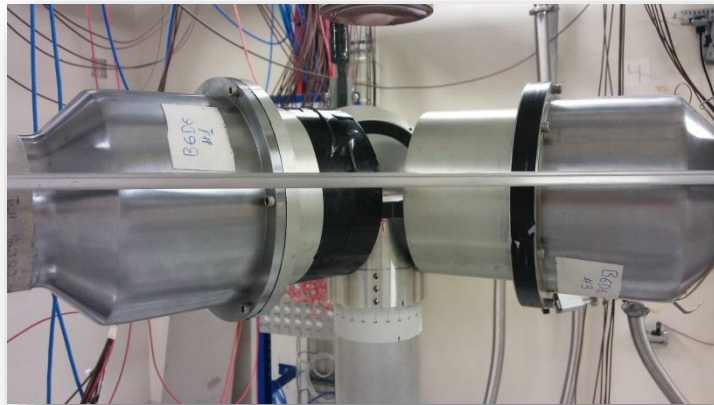
Samples radioactivity: 1.2GBq / target

Investigated two possible experimental setups:

- Detectors shielded with lead, to improve the capture to background ratio.
- Detectors without lead shielding, with higher detection efficiency.

Best configuration was the one without the lead shielding:

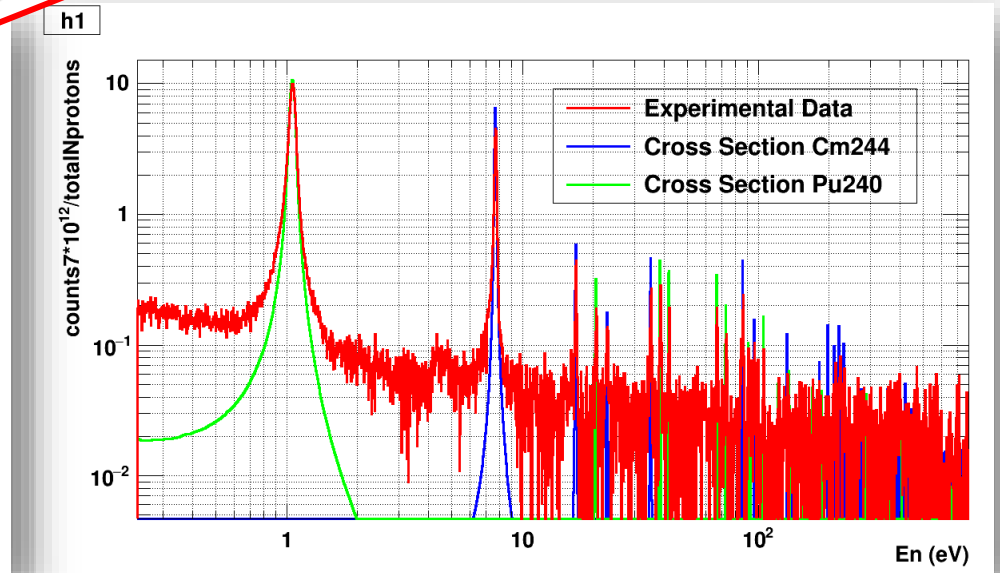
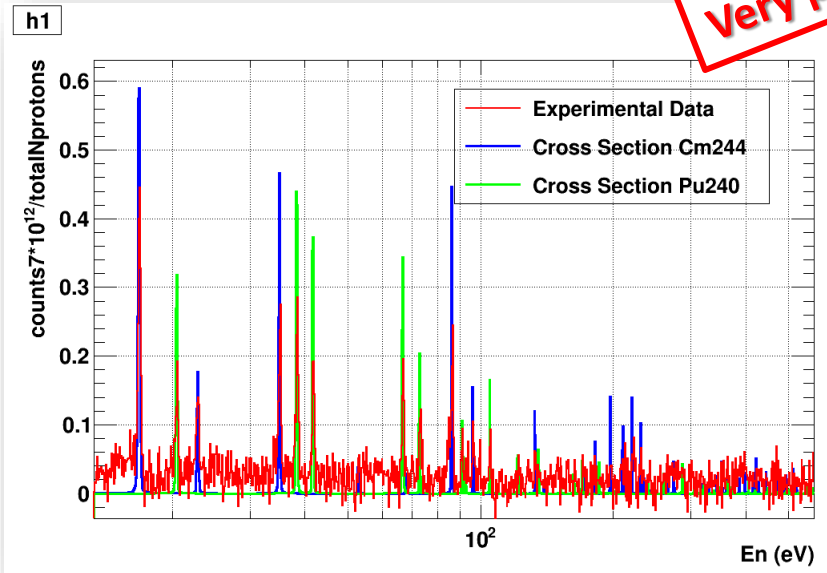
3 C6D6 detectors, placed very close and perpendicular to the beam pipe. The source is in the middle.



Preliminary results show that it is possible to measure the ^{244}Cm capture cross section up to 200-250 eV, as expected (^{246}Cm data taking will start by the end of the week).

In the bottom figures, part of the obtained ^{244}Cm data, together with the ^{244}Cm and ^{240}Pu cross section shapes (the sample also contains ^{240}Pu , which comes from the decay of the ^{244}Cm), for comparison. Note that the effect of the resolution function has not been included in the ^{244}Cm and ^{240}Pu shapes.

Very preliminary !!



- Shutdown activities: all completed
- PS performance very good
- First experiments are taking good data