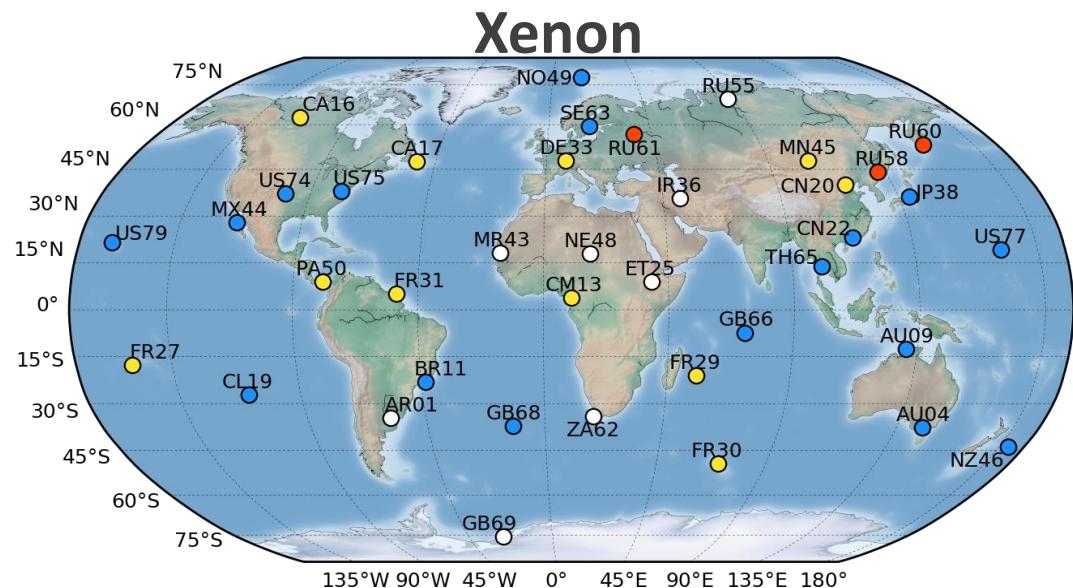


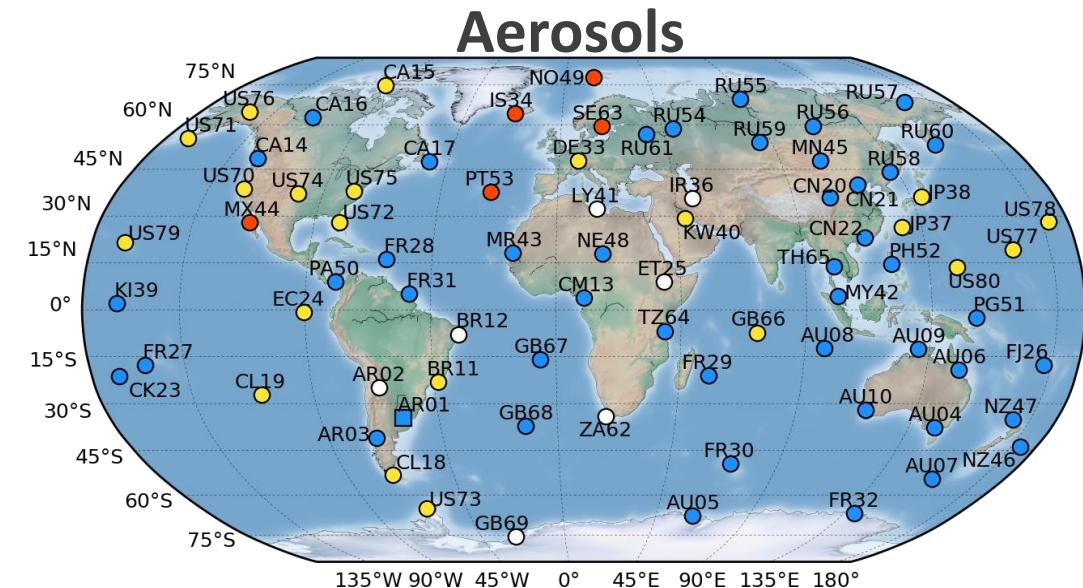
A LOOK BACK AT THE LAST 25 YEARS...



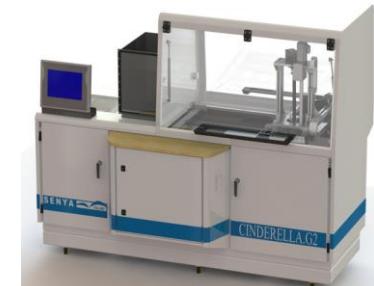
► SPALAX, SAUNA, ARIX



Xenon detection systems



➤ TGD/SNOW WHITE, RASA, CINDERELLA

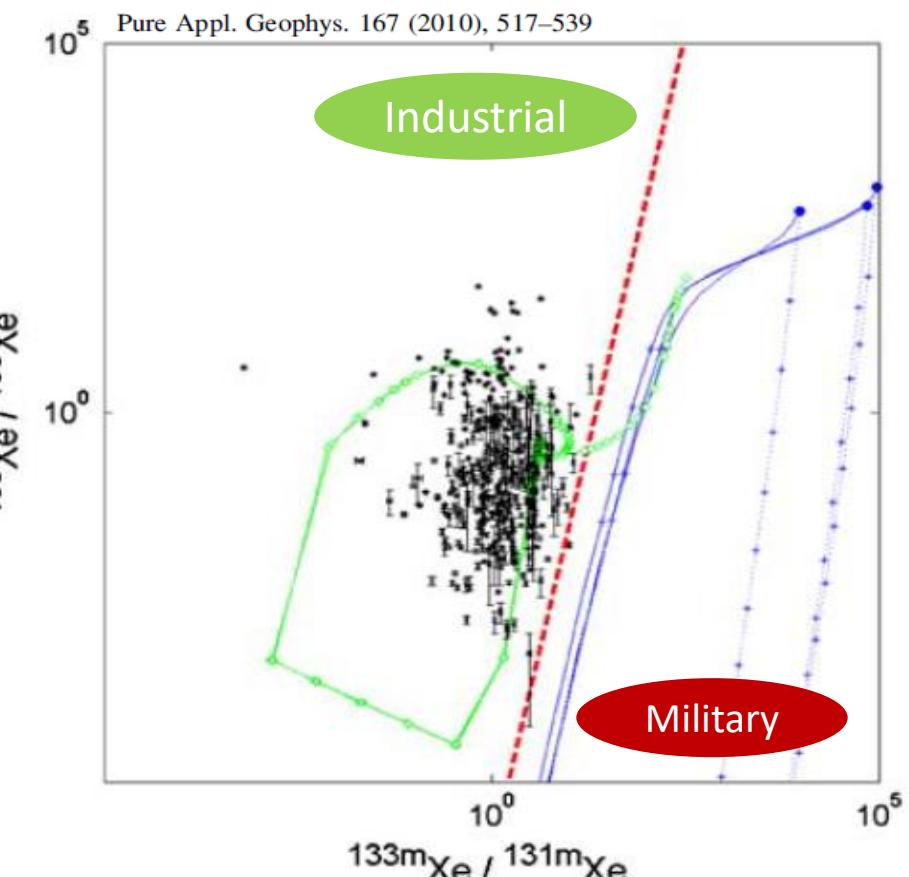
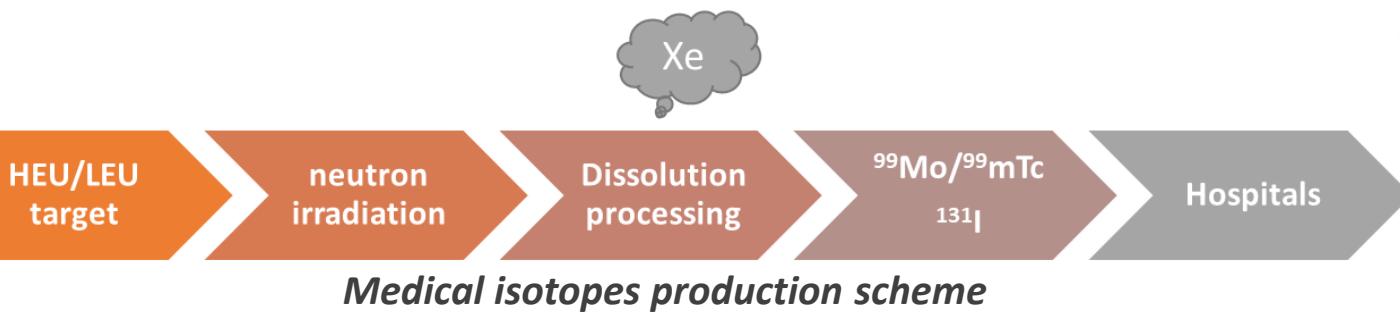
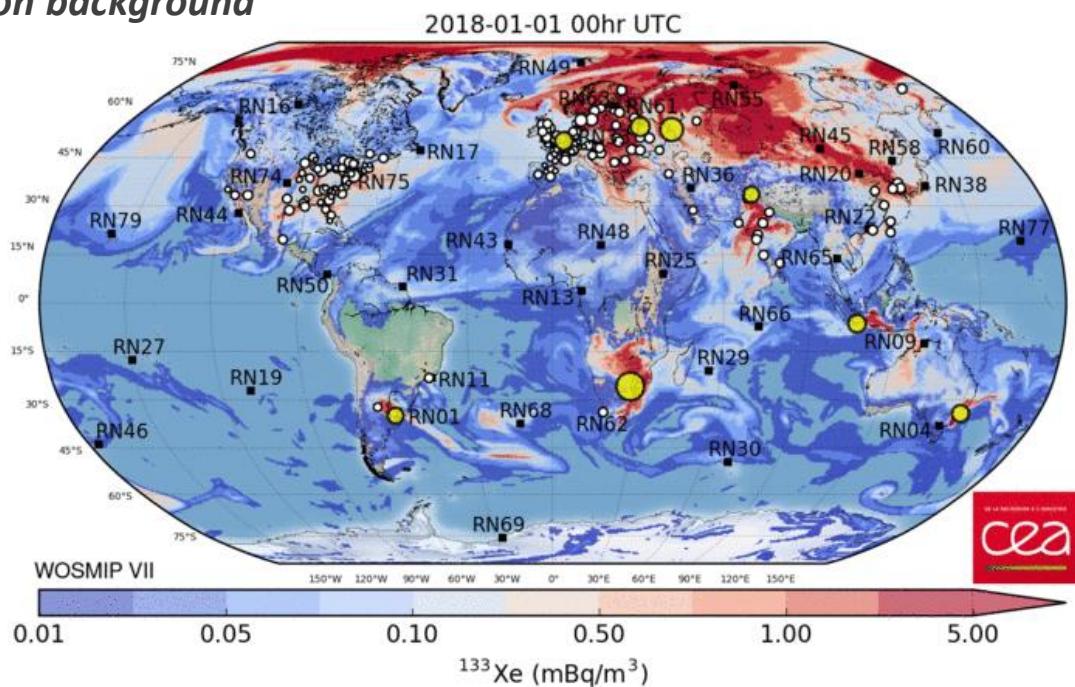


Aerosols detection systems

TECHNOLOGICAL BREAKTHROUGH: XENON

Solutions to get around the xenon background problem...

Xenon background



TECHNOLOGICAL BREAKTHROUGH: XENON

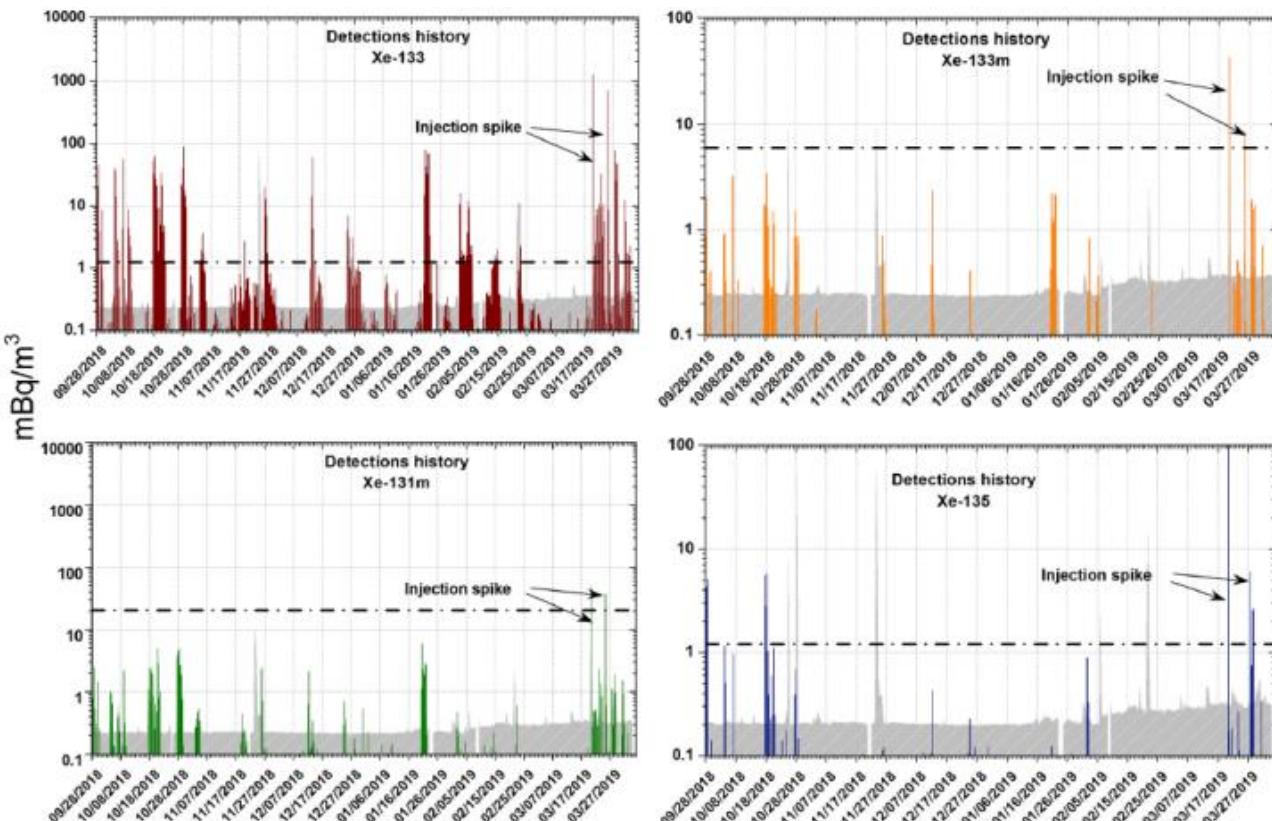
New systems are coming...



SPALAX NG



SAUNA III



| DETECTIONS (#) | | |
|----------------|-----------|-------------|
| RXe | SPALAX-1* | SPALAX-NG** |
| Xe-133 | 303 | 544 |
| Xe-135 | 14 | 78 |
| Xe-131m | 0 | 148 |
| Xe-133m | 8 | 72 |

* Detections expected with a SPALAX-1

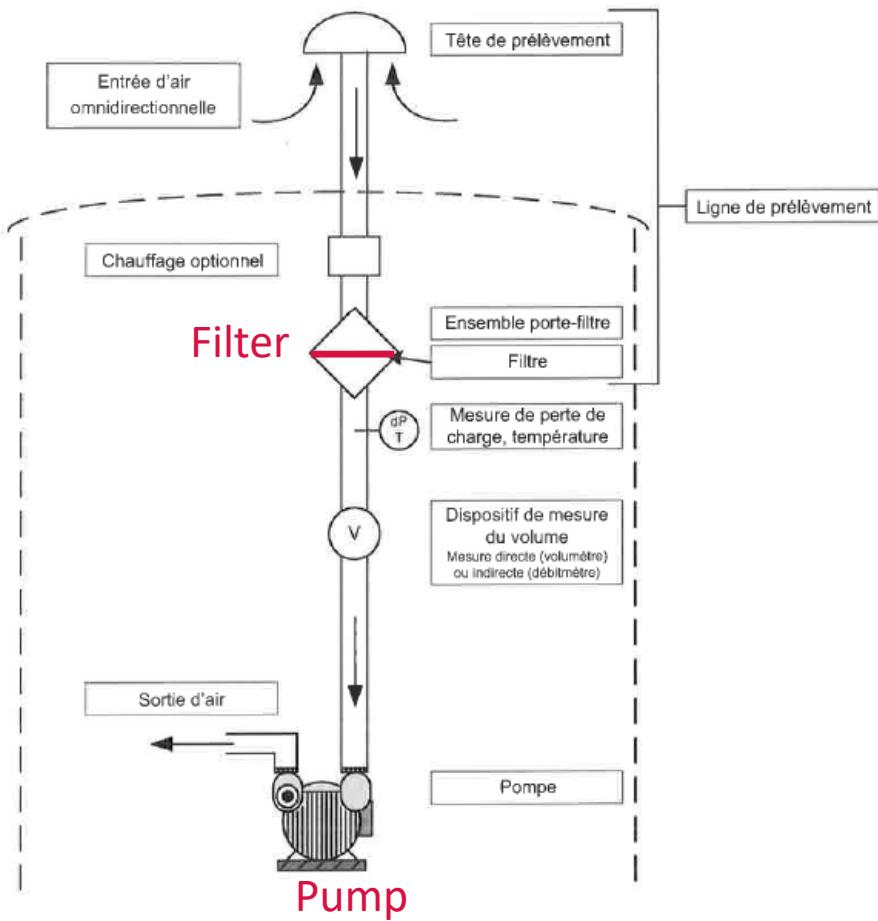
** Detections observed during the two test phases

**SPALAX NG
sensitivity
improvement**

TECHNOLOGICAL BREAKTHROUGH: AEROSOLS

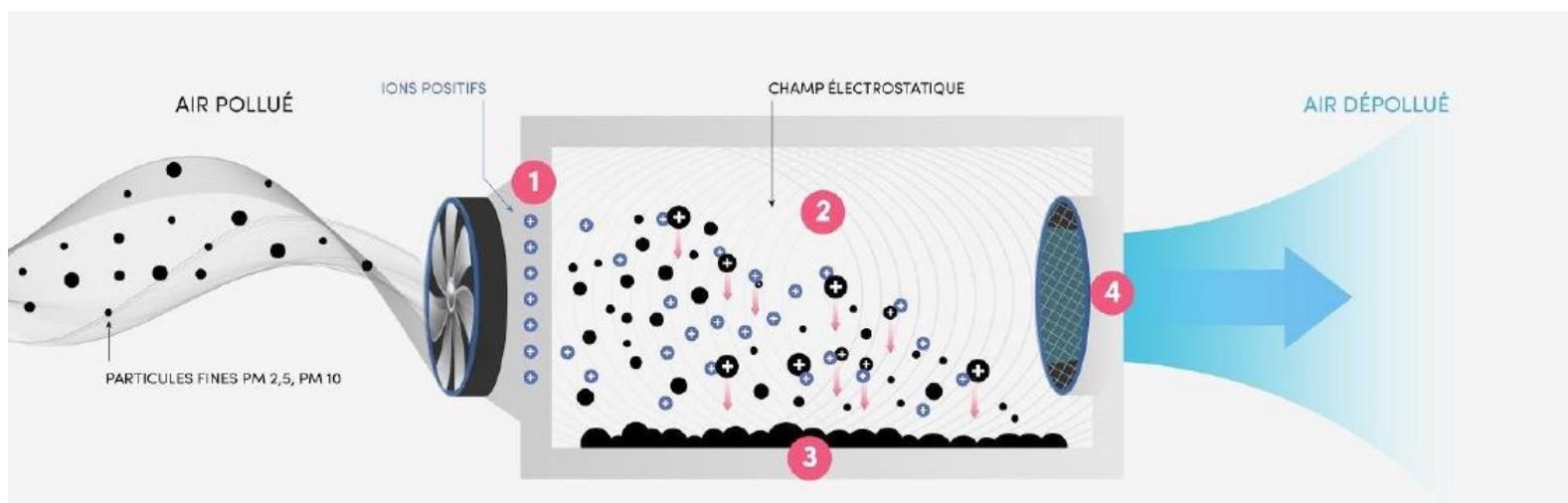
Aerosols detection: enhancement of sampling performance

Today



$900 \text{ m}^3/\text{h} - 10 \text{ kW}$

Tomorrow?



$>5000 \text{ m}^3/\text{h} \sim 2 \text{ kW}$

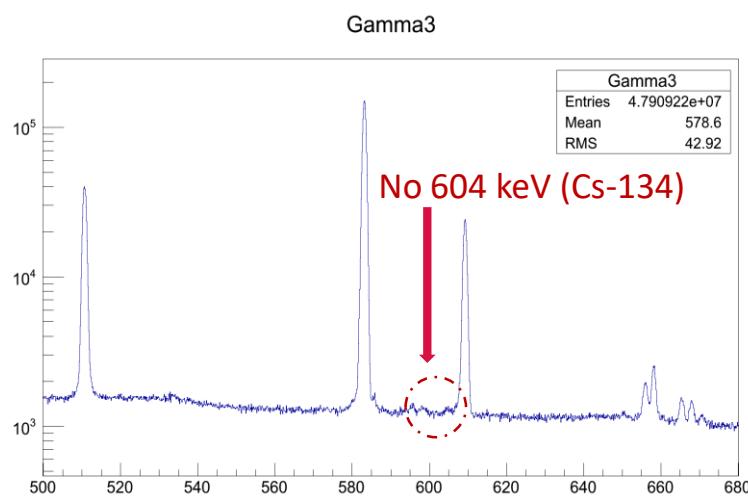
Air Liquide
creative oxygen

TRL4

■ Aerosols detection: enhancement of detection performance



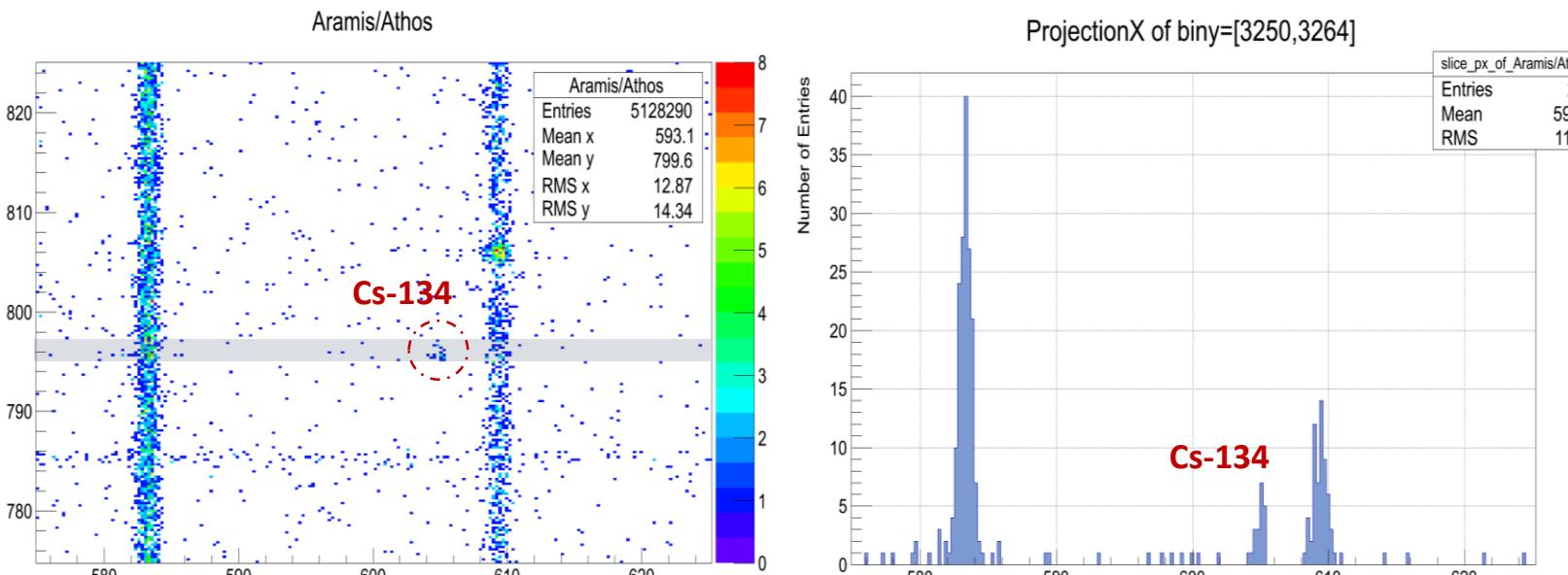
Twin HPGe configuration



1D gamma spectrum fresh filter

- ✓ Extensive use of coincidence/anti-coincidence detection techniques
- ✓ Improved sensitivity, use of the spare detector
- ✓ Reduction of the sample decay period

TRL7



2D gamma spectrum fresh filter

A final thought:

If we refer to the history of techniques, we are perhaps today on the eve of the invention of the microscope.

We could believe that a better detection sensitivity will solve of our problems. In my opinion this is only partially true: new capabilities also means more detections, more questions and more challenges to understand what we are going to detect....

But ultimately a strengthening of the treaty's verification capabilities !