

## **T3.1-P29. Studies of increased air collection capability for SAUNA III**

The current SAUNA II system, installed worldwide in the IMS network, detects radioactive xenon isotopes in an atmospheric air sample. Ambient air is continuously collected, xenon is extracted and measured in sensitive  $\beta$ - $\beta$  detectors in an automated process. Current development on the new SAUNA III system is aimed at improving the time-resolution for the system a factor of two, from 12 to 6 hours, at the same time more than doubling the sample size for each individual sample giving a more sensitive system. A pressure swing adsorption (PSA) step, to be used before the sampling oven, is evaluated to accomplish this performance upgrade. The full gas process will also be optimized to allow for a six hour time resolution and switched to nitrogen as the carrier gas. This upgrade will fit into the existing foot-print of the SAUNA II system and will be available within the current infra-structure.

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