

Name of research institute or organization:

**Bundesamt für Gesundheit**

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Title of project:

**RADAIR: An Automatic Network for Air Radioactivity Monitoring**

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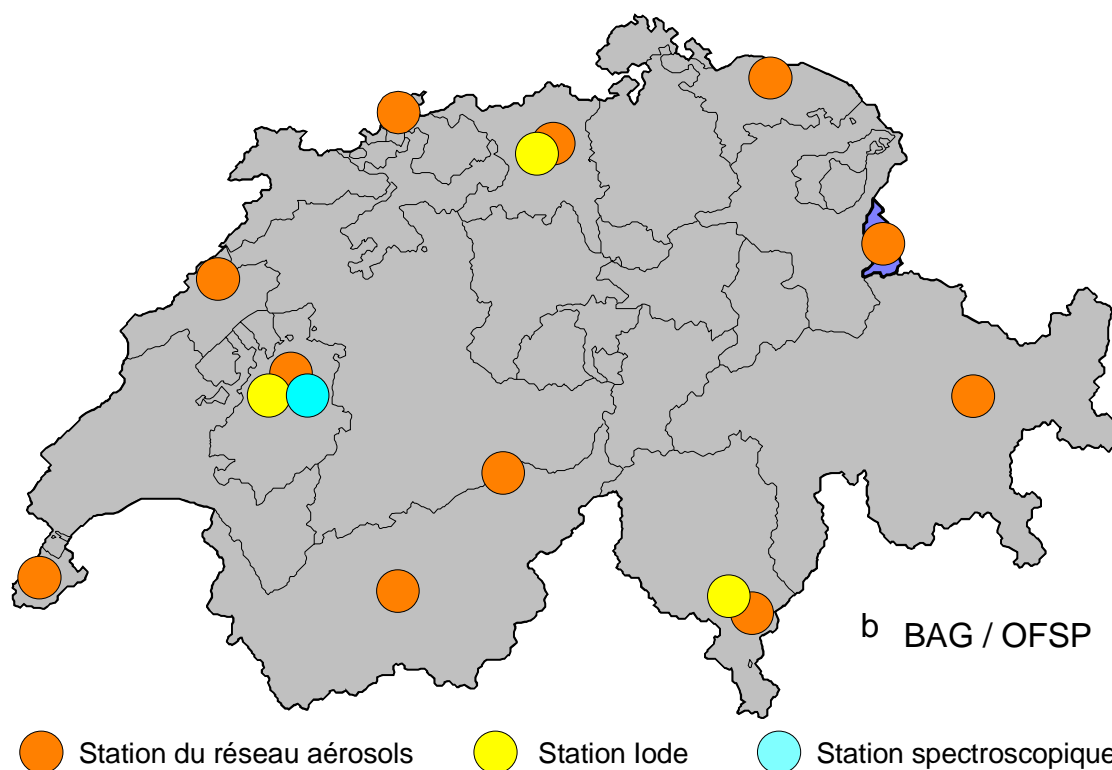
Project leader and team:

Prof. Dr. H. Völkle, project leader  
Pierre Beuret

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Project description:

In order to decide rapidly on protective measures for the population in case of increased radioactivity the responsible emergency authorities need a rapid and automatic air-monitoring network. Therefore the Swiss Federal Office of Public Health (FOPH) is operating an automatic national air radioactivity monitoring system. This network, called RADAIR, is a reliable instrument to detect rapidly and automatically any dangerous increase of radioactivity in the air. The artificial gross beta radioactivity is determined with a detection limit of  $0.5 \text{ Bq/m}^3$ . 11 automatic monitoring stations of the type «FHT 59S» are operating at the following locations: Fribourg, La Chaux de Fonds/NE, Geneva (CERN), Sion/VS, Lugano/TI, Weissfluhjoch-Davos/GR, Vaduz / FL, Güttingen/TG, Villigen-PSI/AG, Basle and one at the **High Altitude Research Station Jungfrauoch** (see map below).



Gross Alpha and Beta radioactivity is measured continuously on aerosols collected on a filter tape and the artificial Beta radioactivity is calculated using the Alpha Beta

compensation method. The measuring range is 0.3 to  $5 \times 10^5$  Bq/m<sup>3</sup> for 30 minutes sampling intervals. The data are transmitted every 30 minutes to the data center at the Environmental Radioactivity Section (SUER) of the FOPH at Fribourg University. If one of the pre-selected warning thresholds (1, 5 and 30 Bq/m<sup>3</sup>) is reached, alarm messages are produced, the highest of them (30 Bq/m<sup>3</sup>) being transmitted automatically to the National Emergency Center (NAZ) in Zurich.

Three of the above mentioned locations (Fribourg, Lugano and Villigen-PSI) are equipped additionally with Iodine monitors of the type «FHT 1700» to measure the gaseous <sup>131</sup>I in the air (measuring range 1 to  $5 \times 10^5$  Bq/m<sup>3</sup>). One location (Fribourg) is equipped with a spectroscopic monitor of the type «FHT 59N1» using a Ge detector to measure the isotopic composition of the air radioactivity. The minimum detectable activity for a 2 hours sampling and measurement period is 0.01 Bq/m<sup>3</sup>.

Key words

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Collaborating partners/networks:

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Publications 2001:

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