**Intercomparison of Radon Concentration Measurements in Volcanic Touristic Caves**

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Radon-222 (Rn) is a naturally occurring radioactive gas that originates from the decay of uranium in rocks and soils. It can accumulate in enclosed environments such as caves, mines, and buildings, posing a potential health risk due to the ionizing radiation emitted by its decay products, which are linked to lung cancer with prolonged exposure. In tourist caves, where visitors and guides may spend considerable time, it is essential to monitor radon levels and assess radiological risks through dosimetry and radiation protection measures [1]. Regular measurements and intercomparison exercises help ensure accurate and reliable data to protect public health and comply with regulatory standards. In this regard, an intercomparison exercise was carried out to measure Rn concentrations in the indoor air of two nearby caves—El Viento and Felipe Reventón caves—in the municipality of Icod de Los Vinos (Tenerife, Canary Islands, Spain). Measurement equipment from the University of La Laguna (ULL) and the Earth Science Institute of the Slovak Academy of Sciences (ESI-SAS) was used. Both continuous monitors and track detectors were employed.

Radon concentrations were monitored at multiple points over 10 days (October 2–11, 2024), alongside microclimatic data (temperature, humidity, and pressure). Continuous measurements were taken using four Radon Scout Plus detectors (SARAD GmbH) and three RPP detectors (Piketronic Co., Czech Republic), both based on a silicon diode diffusion chamber. Integrated measurements used two types of track detectors: CR-39 (Radosys®), analyzed by accredited labs at the Universities of Santiago de Compostela, Cantabria, and La Laguna, and Ramarn detectors with LR-115 Kodak film, processed in the Czech Republic.

The results obtained show good agreement among the different instruments and measurement systems, both in continuous and discrete modes. Higher radon levels were found in the non-public sections (between 6,100 and 11,200 Bq/m³ in the non-accessible section of Cueva del Viento and between 4,000 and 6,700 Bq/m³ in Felipe Reventón) compared to the 1,000 to 5,300 Bq/m³ recorded in the publicly accessible section of Cueva del Viento. These higher values, relative to previous studies in the tourist section [1], are attributed to poorer natural ventilation conditions in the non-tourist sections of Cueva del Viento.

**References**

*[1] Salazar‐Carballo, P. A., López‐Pérez, M., Martín‐González, M. E., Suarez, F. H., & Martín‐Luis, M. C. et al. Radon dynamics and effective dose estimation in a touristic volcanic cave: La Cueva del Viento, Tenerife (Canary Islands, Spain)». GeoHealth, 2022,* [*https://doi.org/10.1029/2022GH000704*](https://doi.org/10.1029/2022GH000704)*.*