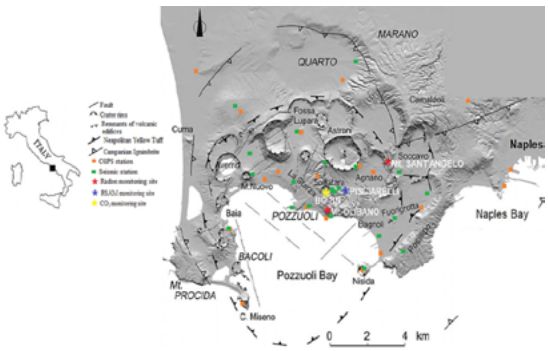

MULTIDISCIPLINARY RESEARCH

FROM RADON MONITORING NEW RESULTS ON THE ACTIVITY OF THE PHLEGRAEAN FIELDS

With a study that lasted seven years, from 2011 to 2017, a group of researchers from the L. Vanvitelli University of Campania, INGV National Institute of Geophysics and Volcanology and INFN monitored the radon emitted in two sites of the Phlegraean Fields caldera. The results were recently published in the Scientific Reports of Nature journal. Two radon measurement stations designed and built by INFN researchers were used for the radon measurement. As part of a collaboration with the INGV, the two prototypes were installed at the Phlegraean Fields in two sites 1 to 4 km from the Solfatara and Pisciarelli areas, where the current phenomenology is more evident. The instruments acquired data automatically, providing a unique set of radon data and environmental parameters, which show variations over time well correlated with the most classic geophysical and geochemical parameters regularly monitored at the Phlegraean Fields. These results represent an absolute innovation in the study of the Phlegraean caldera and mark a significant step forward in the use and interpretation of the radon signal, indicating that extensive time series, properly filtered by the effects of environmental parameters, are an excellent additional tool in monitoring volcanic activity. ■