

The rapid identification of changes in radioactive background is crucial for timely realization of radioactive releases, including nuclear power plant accidents, terrorist events, and nuclear detonations. By combining traditional weather monitoring sensors measuring temperature, humidity, and wind information with radiological sensors like Geiger-Mueller counters and radon gas monitors, it could be possible to account for weather-related changes in background radiation. The Radiation Weather Station light-version (RWS-lite) is an implementation of a sensor suite capable of monitoring both weather and radiation phenomena. Through the usage of a custom printed circuit board (PCB) and a Raspberry Pi 4b, RWS-lite collects information on temperature, pressure, humidity, volatile organic compounds, soil temperature and moisture, and wind information. When combined with radiation sensors that detect radon gas and background radiation, RWSlite could provide the necessary weather monitoring to identify background radiation fluctuations. RWSlite is a ~\$600 package, allowing for it to be widely distributed to crowd-source these radiation weather measurements. The measurements can then be relayed back to a central database to be analyzed further. This allows better location of radiation events. RWSlite could also serve as a valuable outreach and educational tool in schools to spur an interest in radiation detection. Previous work to RWSlite has involved the creation of a PCB and establishing basic functionality. More recent work has focused on improving the functionality of the PCB, creating a more effective codebase, and reworking the database to provide better security and data management.