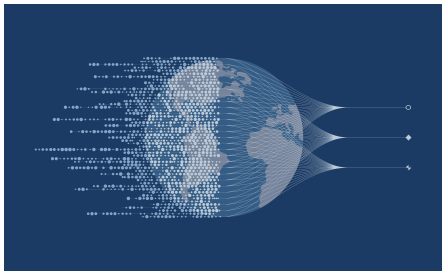

ID: **P3.6-499** Type: **E-poster**

Ratios on Multiple Isotope Ratio Chart

One of the common methods to interpret radioxenon data is by using a Multiple Isotope Ratio Chart (MIRC). A MIRC enables classification of isotopic ratios into domains corresponding to either civilian activities or nuclear explosion events. This tool is invaluable for distinguishing between different sources of radioxenon, thereby aiding in identifying potential nuclear activities. Two of the largest contributing factors in the equations for radioxenon activity concentrations outside of decay counts are the processing time and collection time. The effect of these parameters on the distribution of MIRCs is critical, as different times can significantly alter the isotopic ratios observed. In this research, we investigate how variations in processing and collection times influence MIRC distributions. By understanding these influences, we aim to improve the accuracy and reliability of radioxenon data interpretation, enhancing the efficacy of monitoring for nuclear compliance and environmental studies.

E-mail

michael.mayer@pnnl.gov

Primary author: Dr MAYER, Michael (Pacific Northwest National Laboratory (PNNL))

Co-authors: Mr HAYES, James (Pacific Northwest National Laboratory (PNNL)); Dr COOPER, Matthew (Pacific Northwest National Laboratory (PNNL))

Presenter: Dr MAYER, Michael (Pacific Northwest National Laboratory (PNNL))

Session Classification: P3.6 Analysis of Radionuclide Monitoring Data

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.6 Analysis of Radionuclide Monitoring Data