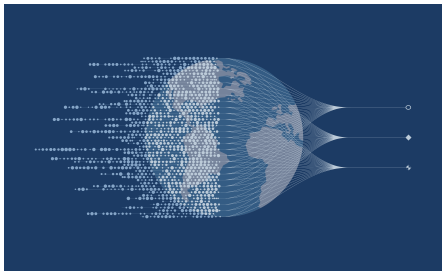

ID: **P3.6-295** Type: **E-poster**

Confidence building methods for implementation of machine learning tools for automated gamma spectral analysis

Artificial intelligence machine learning (AI/ML) tools have the potential to greatly streamline gamma spectral analysis for a variety of applications including nuclear forensics and nuclear explosion monitoring (NEM). Models are being trained with hundreds of thousands of previously analyzed gamma spectra by experts at Pacific Northwest National Laboratory (PNNL) and the CTBTO PrepCom. These tools could help reduce human error involved in analyzing high numbers of gamma spectra and help to focus expert time on review of the analyzed data. For applications like nuclear forensics and NEM it is critical to have high confidence in reported data so thorough verification and validation methodology needs to be carefully developed. Initial considerations for AI/ML automated gamma spectral analysis robustness testing will be discussed that will enable possible transition of these tools for use in operational activities.

E-mail

Lori.Metz@pnnl.gov

In-person or online preference

Primary author: METZ, Lori (Pacific Northwest National Laboratory (PNNL))

Co-authors: ARCHAMBAULT, Brian (Pacific Northwest National Laboratory (PNNL)); PIERSON, Bruce (Pacific Northwest National Laboratory (PNNL))

Presenter: METZ, Lori (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