



Source Term Analysis of Xenon (STAX)

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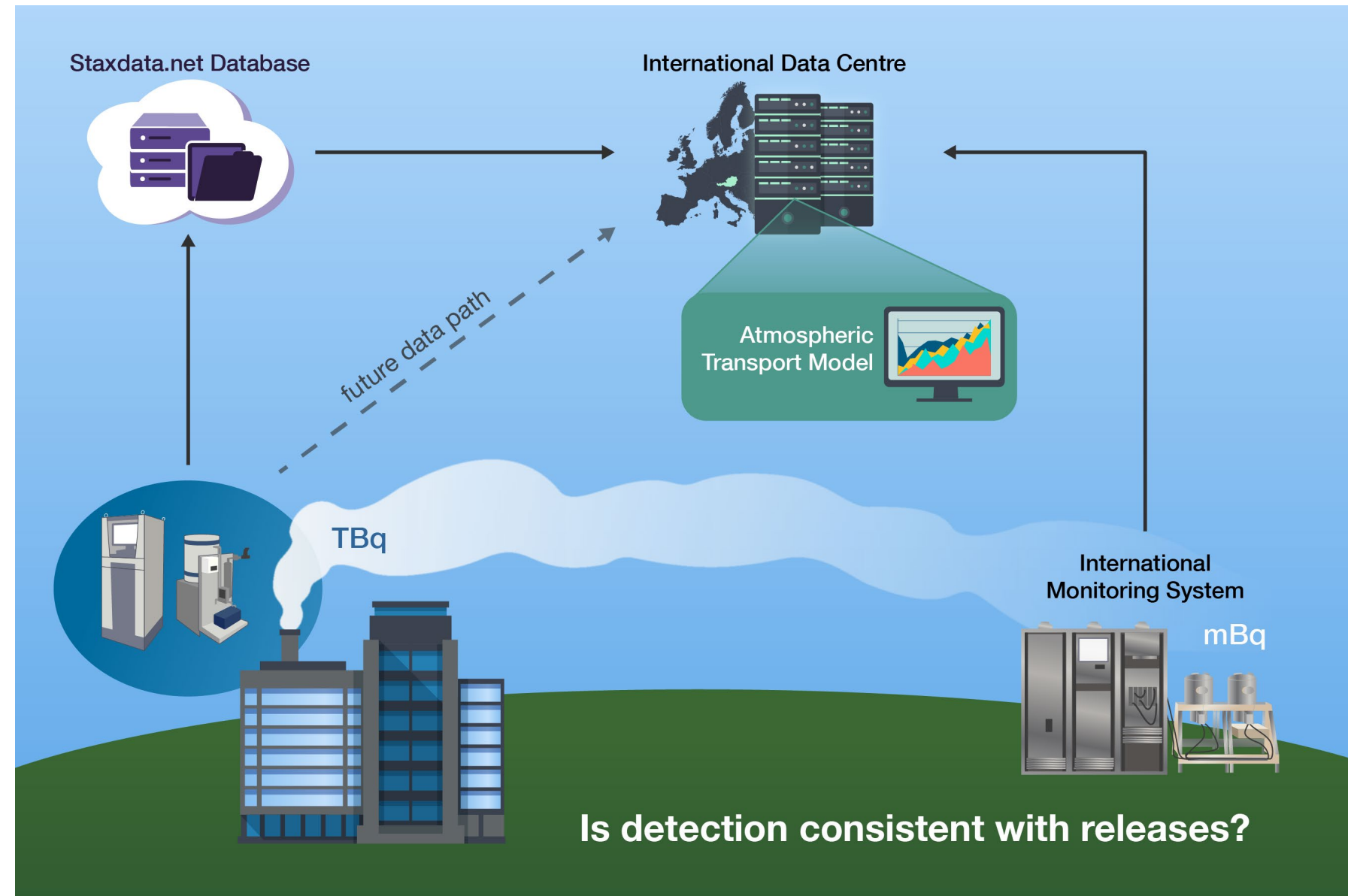
PNNL is operated by Battelle for the U.S. Department of Energy

PNNL-SA-162369



STAX Concept

- Grew from discussions at WOSMIP
- Guidelines came from NDC discussions
- Voluntary Partnerships



Facilities voluntary participate and control access to data

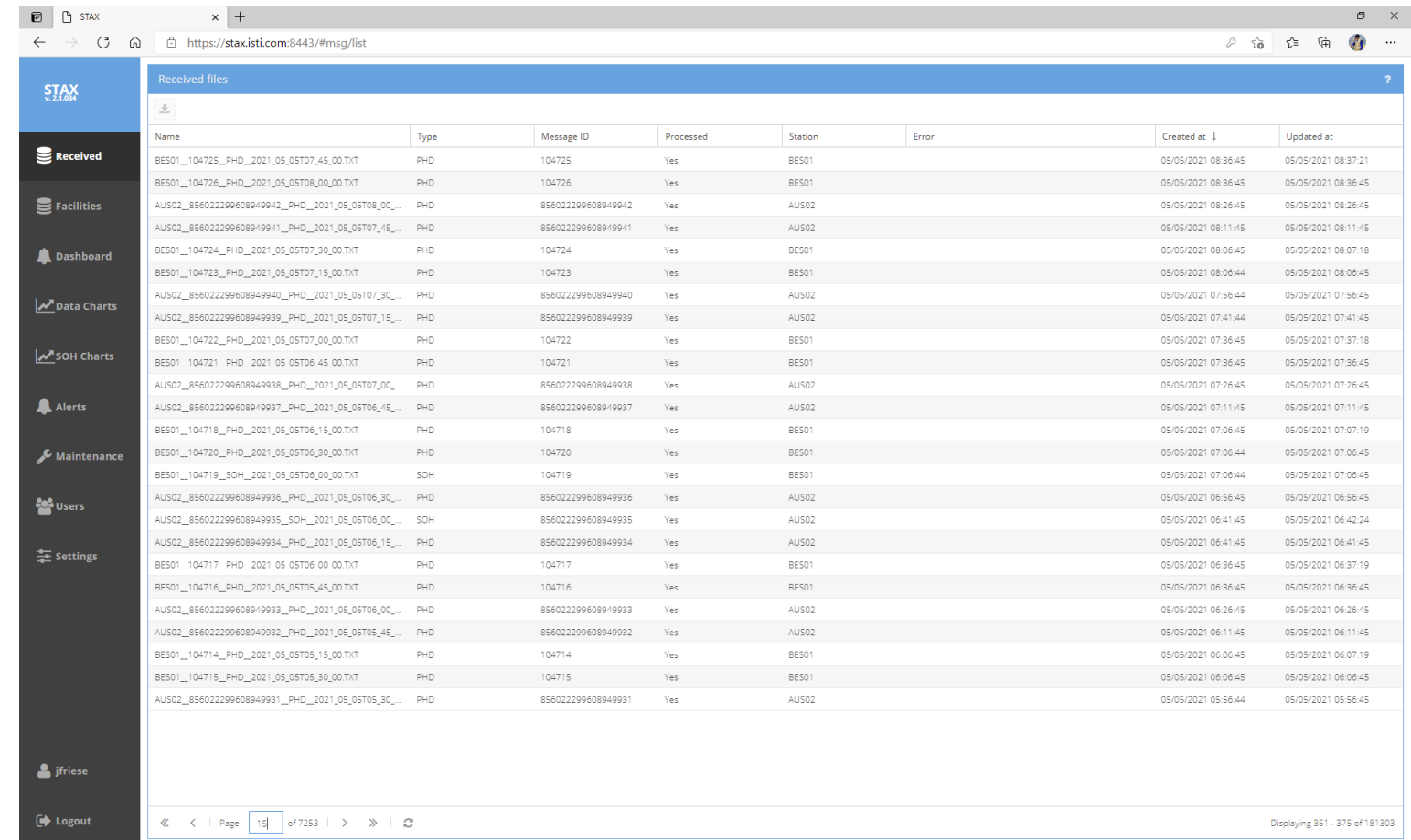
STAX Equipment

- Provided at no cost to facilities
- HPGe high resolution detector
 - Measures ^{131m}Xe , ^{133m}Xe , ^{133}Xe , ^{135}Xe
 - 15 Minute intervals
- Current 3 manufacturers of STAX equipment



STAX Detector at IRE

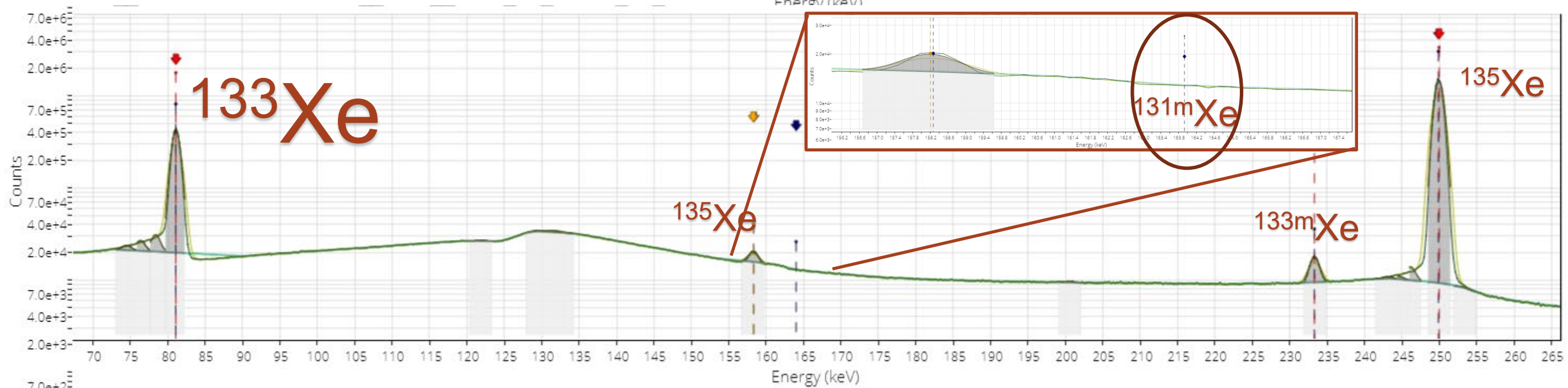
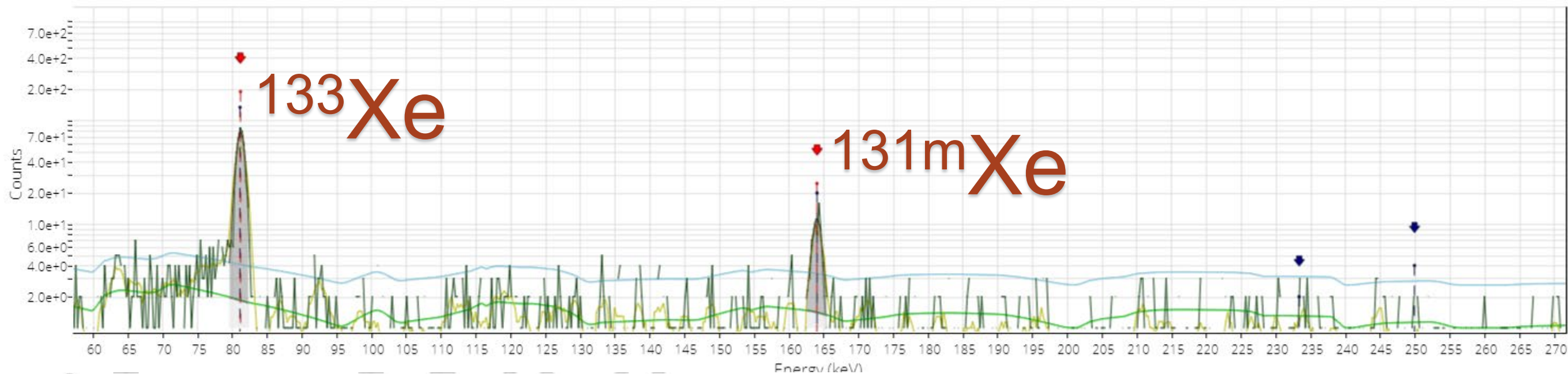
- Secure Data Repository
 - Matthias Auer presentation
- File structures similar to IMS formats
 - Spectra in PHD format (when available)
 - SOH in IMS format
 - Automated Time Series (ATS) similar to ARR
- Data available to authorized users
 - Encrypted email
 - Wget protocols



The screenshot shows the STAX web interface. On the left is a dark sidebar with navigation links: Received, Facilities, Dashboard, Data Charts, SOH Charts, Alerts, Maintenance, Users, Settings, jfriese, and Logout. The main content area is titled 'Received files' and contains a table with the following columns: Name, Type, Message ID, Processed, Station, Error, Created at, and Updated at. The table lists 35 rows of data, each representing a received file. The bottom of the interface shows a pagination bar indicating 'Page 15 of 7253' and 'Displaying 351 - 375 of 181303'.

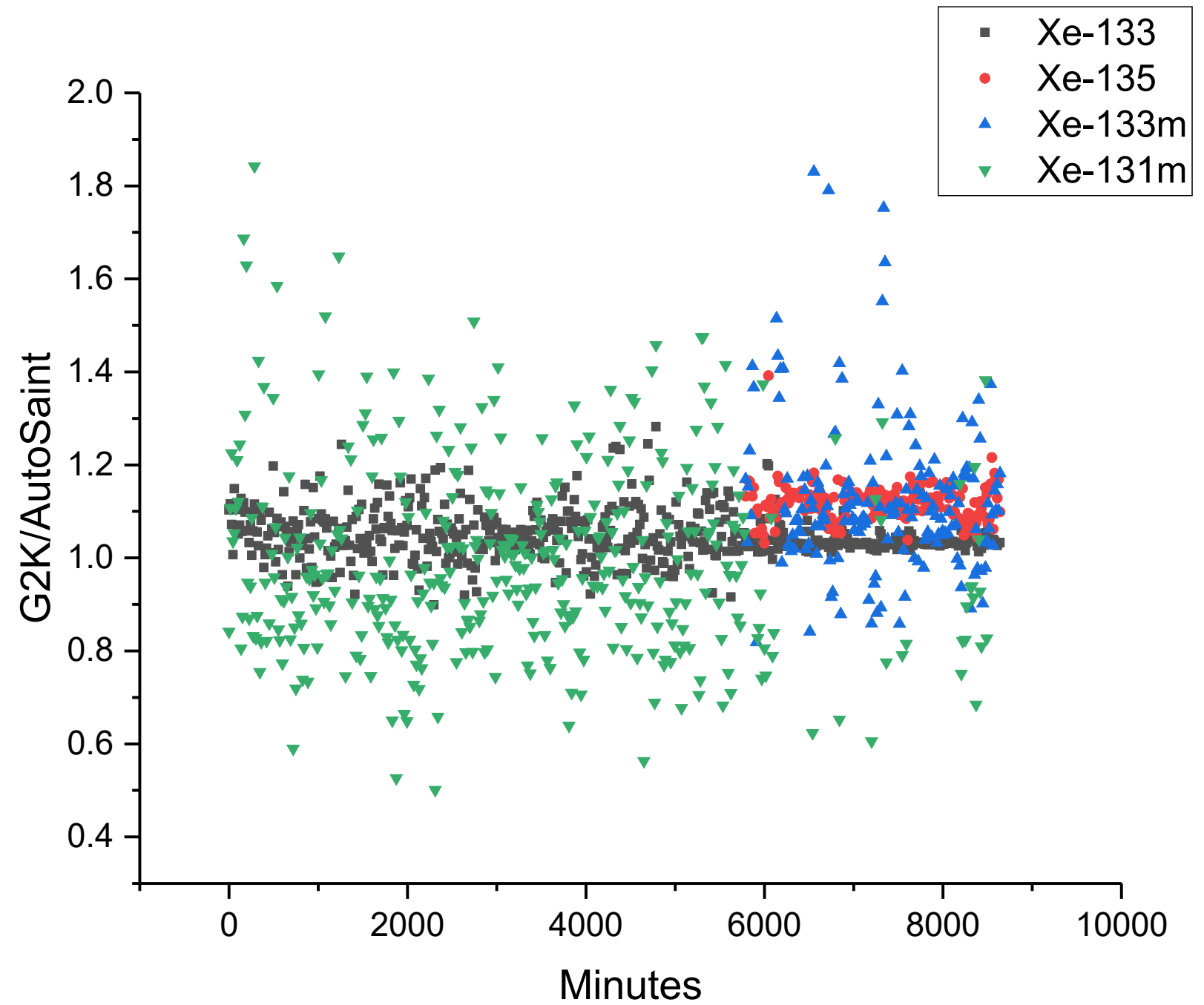
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AUS02_856022299608949941_PHD_2021_05_05T07_45_00.TXT	PHD	856022299608949941	Yes	AUS02		05/05/2021 08:11:45	05/05/2021 08:11:45
BES01_104724_PHD_2021_05_05T07_30_00.TXT	PHD	104724	Yes	BES01		05/05/2021 08:06:45	05/05/2021 08:07:18
BES01_104723_PHD_2021_05_05T07_15_00.TXT	PHD	104723	Yes	BES01		05/05/2021 08:06:44	05/05/2021 08:06:45
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BES01_104721_PHD_2021_05_05T06_45_00.TXT	PHD	104721	Yes	BES01		05/05/2021 07:36:45	05/05/2021 07:36:45
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AUS02_856022299608949937_PHD_2021_05_05T06_45_00.TXT	PHD	856022299608949937	Yes	AUS02		05/05/2021 07:11:45	05/05/2021 07:11:45
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BES01_104716_PHD_2021_05_05T05_45_00.TXT	PHD	104716	Yes	BES01		05/05/2021 06:36:45	05/05/2021 06:36:45
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BES01_104715_PHD_2021_05_05T05_30_00.TXT	PHD	104715	Yes	BES01		05/05/2021 06:06:45	05/05/2021 06:06:45
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QA/QC Low and High Level Samples

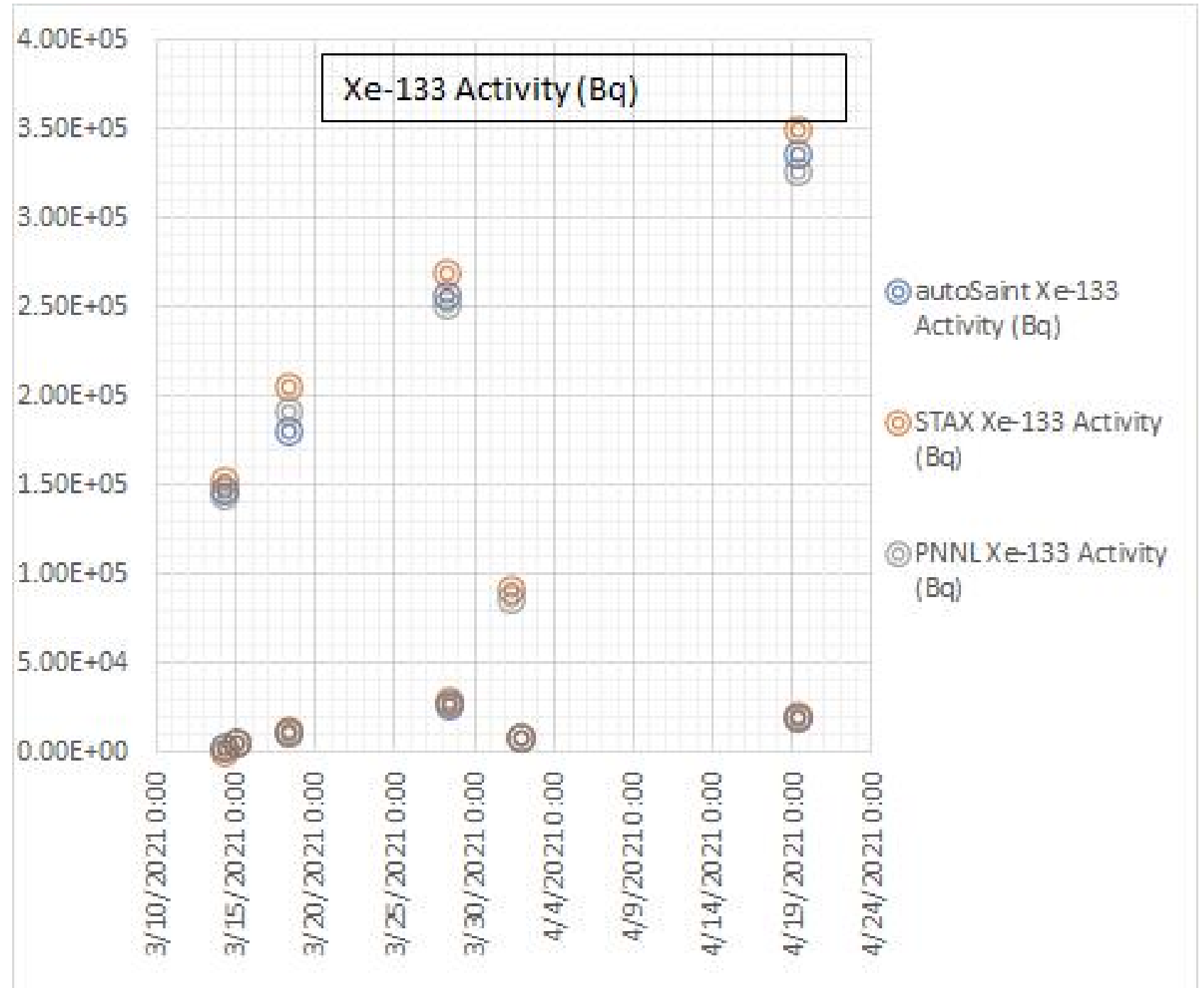
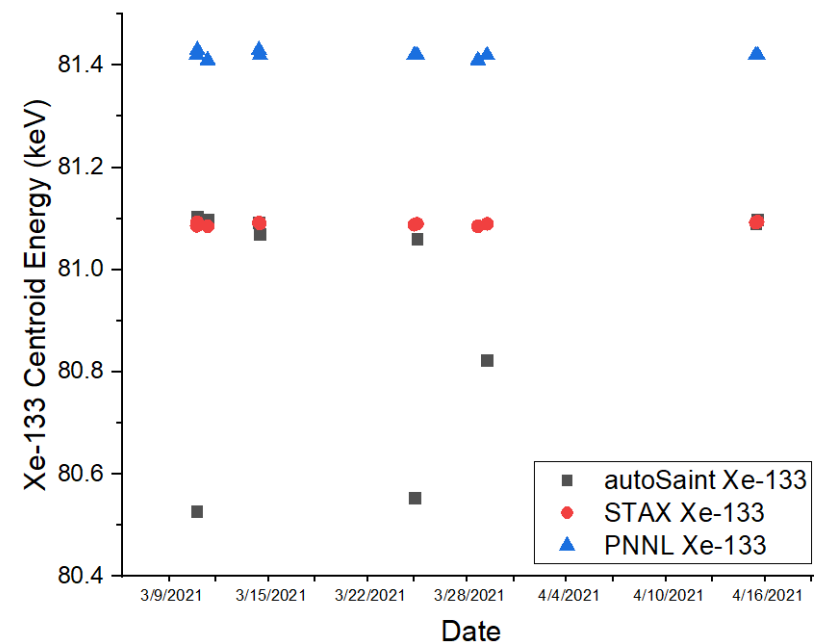


Data QA/QC

- Cross Check Automated analysis
 - G2K vs Autosaint



QA/QC – Human Analysis

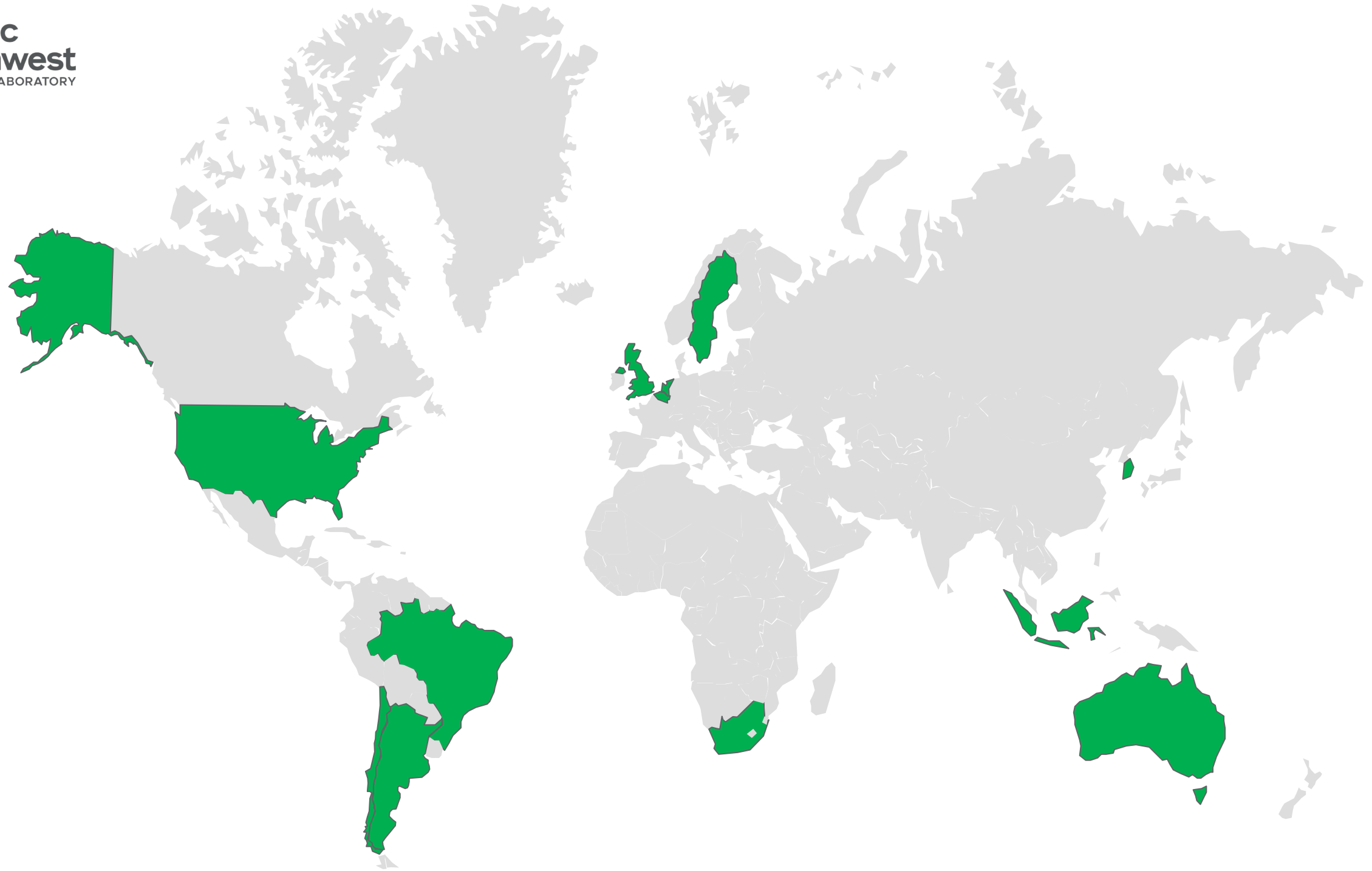


STAX Data Sharing

- Data access agreements established between PNNL and each production facility
 - Production facility can delay data access at the database
 - Production facility approves access by the NDC's
- Data access agreements established between PNNL and each NDC
 - Data is used to help better understand the impact of emissions from man made isotope production on nuclear explosion monitoring
 - No further distribution of the data
 - All data products must be reviewed and release by PNNL and the production facility before publishing or presenting
 - PNNL is the central point of contact



● Conversation with STAX



Thank you

