

# Radioxenon Sources in a High Background Environment

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Isotopes of radioxenon are prevalent in the atmosphere and present a “background” signal which can make radioxenon detection analysis and event reconstruction analysis more difficult. In recent years advances in software have allowed for Bayesian reconstruction techniques to be applied to radionuclide detections to determine the source parameters. This work focusses on the effort to reconstruct radioxenon sources amongst a high background signal using novel event analysis techniques and inverse atmospheric transport modelling simulations. Here we define a background signal based on estimated nuclear reactor releases, combine a “real” signal, then reconstruct the source parameters using a software tool known as FREAR.

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## Promotional text

Identifying relevant detections of radioxenon amongst the global atmospheric background produced and sustained by civil nuclear facilities, presents one of the major challenges to the radionuclide monitoring community.

## Oral preference format

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