Tuning alarm levels for Xenon isotope detection

Peter Kimstrand, Peter Jansson, Mattias Aldener, Henrik Olsson, Sofie Liljegren and Anders Ringbom
FOI, Swedish Defence Research Agency

- The topic of this poster automatic alarms on radioxenon detections.
- Xe-detection data from four stations were combined with simulated nuclear explosion events.
- Simulations of nuclear explosion events were added to measurements and evaluated using a two-tiered scheme, evaluating MIRC-ratios and anomaly levels based on historical data from each station.
- Three alarm levels were used; Low, Medium and High.
- Alarms are raised for 72.4 +/- 7.3% of the simulated events.
- The main cause for *not* raising an alarm is that
  - the activity concentration is below the anomaly threshold

    -and-

  - the combination of detected isotopes were not MIRC compatible.
- More details and results in the poster!