

# Investigation on non-negative net counts in Beta-Gamma Coincidence Measurements Using Monte Carlo Method

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- Activities of CTBT xenon isotopes are determined by net count calculation with background subtraction and interference corrections.
- Compared to statistical results of gas detector background measurements, decision threshold is under-estimated by the normalized number of counts from a longer detector background measurement.
- Applying non-negative in detector background subtraction results in different distributions of net counts but no impact on decision threshold estimation.
- Applying non-negative net numbers of counts for interference corrections has an impact on the decision threshold estimation in sample measurements of low counts.



**Session: Techniques for low-level  $\alpha$ -particle,  $\beta$ -particle and  $\gamma$ -ray measurements**