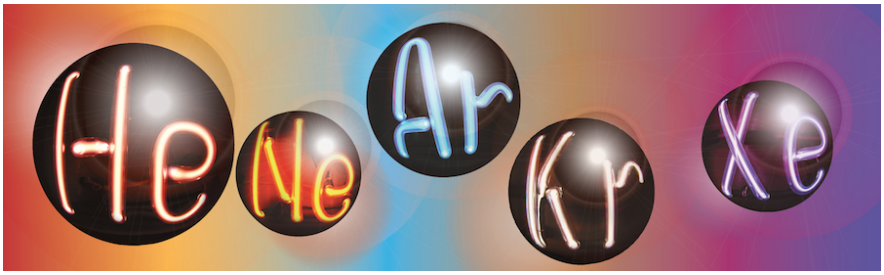

Contribution ID: **25** Type: **Oral Presentation**

Measurement of Ionization and Scintillation Yields from 214Bi beta-decay in XENONnT

Friday, 24 October 2025 09:40 (20 minutes)

Precise knowledge of ionization and scintillation yields at high energies is crucial for liquid xenon detectors, particularly for rare-event searches such as neutrinoless double-beta decay. While low-energy yields are extensively studied, data above 100 keV remain limited. Using XENONnT data and a time-coincidence identification method, we present yield measurements from the clean beta decay of 214Bi directly to the ground state of 214Po, providing valuable data up to 3.2 MeV. This dataset enabled us to create an accurate, data-driven yield model for high-energy electron recoils, validated extensively with simulations. These results can significantly enhance electron recoil modeling and detector response predictions at higher energies.

Primary author: FUSELLI, Carlo

Presenter: FUSELLI, Carlo

Session Classification: Light/charge response in Noble Elements

Track Classification: Light/charge response in Noble Elements (gas, liquid, dual phase)