

# **An Ar-gas ionization chamber for alpha particle detection at the Yangyang underground laboratory.**

*Thursday, 25 May 2017 14:30 (0:20)*

## **Content**

A high-sensitivity ionization detector for measuring alpha particles in a laminar sample has been operating in the Yangyang underground laboratory. The alpha counter is used to assay detector materials, especially their surface contamination, for the COSINE dark matter experiment and the AMoRE double beta decay experiment. Using distinct rise time, this instrument describes characteristic signals from ionization electrons produced from the sample tray and veto those from other sources. The detector can reach a sensitivity as low as  $0.0001 \text{ count/cm}^2/\text{hr}$ . Low-background measurements will be presented along with studies of various surface treatments, cleaning methods, and artificial contamination.

## **Summary**

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**Session Classification :** Poster Session