

WITHDRAWN - Spectroscopic-based particle discrimination in Ar gas

Tuesday, May 25, 2021 5:00 AM (18 minutes)

We performed a time-resolved spectroscopic study of the VUV/UV scintillation in argon gas as a function of pressure and electric field, with a wavelength sensitive detector operated with different radioactive sources. Distinctive features of the argon light are evidenced, which are in contrast with the general assumption that the scintillation is mainly monochromatic at 128 nm.

Our work opens new paths toward novel particle identification techniques based on the spectral information of the scintillation light. This technique is complementary to the ones currently used in dual phase TPCs and offers new ways to reduce significantly the background leakage. The results of our R&D on this novel particle discrimination technique will be presented in this talk along with future plans for large-scale detector applications.

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