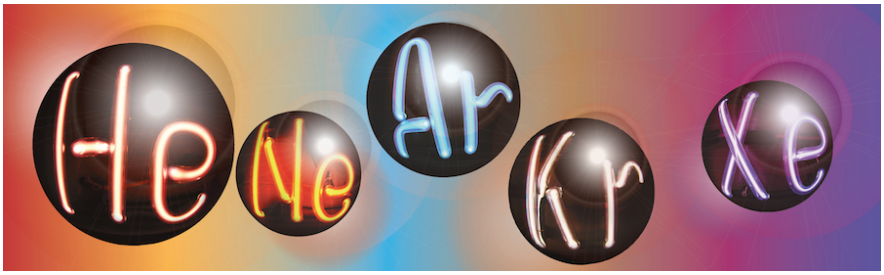

Contribution ID: **10** Type: **Presentation**

Study of the Low-Energy ER/NR Discrimination and its Electric-Field Dependence with Liquid Argon

Friday, 22 September 2017 09:00 (15 minutes)

ANKOK project is a dark matter search experiment in Japan using the double-phase argon detector, specialized for the low mass WIMP (~10GeV) detection. Double-phase Argon detector is generally a good technique for WIMP dark matter direct search due to powerful rejection power against electron recoil BG events. However compared with xenon, the basic properties and discrimination power from S2 signal in the low energy region are not well-known and thus S2 signal has not been effectively used in current experiments with argon.

In this talk, we will present results on our evaluation of S2 properties at low energy region below 40 keVnr and its discrimination power between electron and nuclear recoils, based on a prototype LAr TPC and detectors dedicated for neutron tagging. The drift fields under study ranges from null to 3kV/cm and its search feasibility for lower mass WIMP with argon will be also discussed.

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