Contribution ID: **71** Type: **Plenary Talk**

Test of Resistive Plate Chambers as a tracking device for the MATHUSLA experiment

Monday, 19 February 2018 16:00 (20 minutes)

In the quest for particle dark matter and physics beyond the Standard Model, the possibility of the existence of neutral long-lived particles (LLPs) has been proposed. The MATHUSLA project has been designed to detect possible LLPs produced in LHC collisions with a surface detector built by exploiting existing technologies. The detector will be installed above one of the high-luminosity interaction regions of the LHC before the beginning of the Phase-2 operation. A small-scale MATHUSLA test detector implemented with two stations of scintillators from the D0 experiment and three stations of Resistive Plate Chambers originally designed for the ARGO experiment was installed and operated above the ATLAS interaction point in November 2017. Each RPC station consisted of two detector layers, about 7 mˆ2 each, with orthogonal read-out strips. The results of the test run will be presented.

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Session Classification: New Physics Experiments