Contribution ID: **63** Type: **Presentation**

NA64 searching for hidden sectors at the CERN SPS

Wednesday 20 June 2018 14:50 (20 minutes)

NA64 is a fixed target experiment at the CERN SPS to search for hidden sectors. In this talk, we will present our latest results on the search for a new sub-GeV vector gauge boson (A′) mediated dark matter (χ) production. The A′, called dark photon, could be generated in the reaction $e^-Z \rightarrow e^-ZA'$ of 100 GeV electrons dumped against an active target which is followed by the prompt invisible decay $A' \rightarrow \chi\chi$. The experimental signature of this process would be a clean event with an isolated electron and large missing energy in the detector. This allows us to set new limits on the γ–A′ mixing strength and constrain models with light thermal dark matter or light scalar, Majorana or pseudo-Dirac thermal dark matter. Preliminary results on the search for the $X \rightarrow e^+e^-$ decay of a new light X boson which could explain a recently observed anomaly in the ^{8}Be transitions will be also discussed.

Primary author: Mr DEPERO, Emilio (ETH)

Presenter: Mr DEPERO, Emilio (ETH)

Session Classification: Plenary presentations