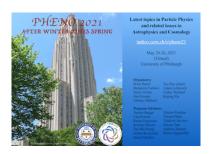Contribution ID: **1123**                                                                 Type: **DM**

# Detecting Dark Matter with Far-Forward Emulsion and Liquid Argon Detectors at the LHC

*Monday 24 May 2021 15:15 (15 minutes)*

New light particles may be produced in large numbers in the far-forward region at the LHC and then decay to dark matter, which can be detected through its scattering in far-forward experiments. In the talk, we will discuss the discovery potential of such far-forward searches for light dark matter scattering off electrons or nuclei in an emulsion or liquid argon detector placed on the beam collision axis during HL-LHC. For illustration, we will focus on a popular example of invisibly-decaying dark photons, which decay to dark matter through $A' \to \chi\chi$, while further prospects for probing BSM interactions of neutrinos will also be presented. These results motivate the construction of far-forward emulsion and liquid argon (FLArE) detectors, as well as a suitable location to accommodate them, such as the proposed Forward Physics Facility.

## Summary

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