

# Phenomenology 2025 Symposium



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## Can the LHC be sensitive to Light Dark Mediators?

*Tuesday 20 May 2025 17:45 (15 minutes)*

We propose a novel method to obtain sensitivity to dark mediators and dark sectors at the LHC with masses of  $\sim 10$  MeV – 10 GeV, providing complementarity with beam dump experiments. For this talk, we consider dark photons, which can be produced at the LHC by neutral meson decays, bremsstrahlung off baryons, or directly produced in correlation with a jet. We then consider visible decays to muon pairs as the signal channel and provide methods to control backgrounds. We show a range of sensitivities dependent on various estimates of backgrounds and different signal threshold requirements.

### Mini Symposia (Invited Talks Only)

### Plenary (Invited talks only)

**Author:** Dr SATHYAN, Deepak

**Co-authors:** KARTHIKEYAN, Aparajitha (Department of Physics and Astronomy, Texas A&M University); Prof. DUTTA, Bhaskar; KIM, Doojin; KIM, Hyunyong (Texas A & M University (US))

**Presenter:** Dr SATHYAN, Deepak

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