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## Flash talk: Dark Photon Search at the Short Baseline Near Detector. Gaetano Fricano

*mardi 16 septembre 2025 16:45 (3 minutes)*

This study presents a search for Dark Photon signals at the Short-Baseline Near Detector (SBND), recently commissioned at Fermilab. Dark Photons, predicted in minimal extensions of the Standard Model with an extra U(1) gauge symmetry, can be a source of electron positron pairs, producing broader and more energetic shower topologies than neutrino-induced backgrounds. Exploiting SBND's excellent imaging capabilities, kinematic and timing-based discriminants are investigated to suppress backgrounds and probe a previously unexplored region of the dark photon parameter space.

**Classification de Session:** Students presentations