

Searching for dark photons at the FPF

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In the search for new physics, the dark photon is one of the most studied targets. It is often invoked as a mediator connecting the SM to a secluded dark sector charged under a novel dark $U(1)_X$ symmetry. However, beyond the minimal secluded dark photon model there is a myriad of anomaly-free $U(1)$ extensions of the SM, which originate from gauging combinations the accidental global flavour symmetries of the SM. In this talk I want to review some of the most prominent examples of these minimal $U(1)$ extensions and discuss their phenomenology, as well as the potential to search for them at the future Forward Physics Facility.

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