EIC opportunities for Snowmass



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Prospects for Dark Photons at EIC

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Dark Photons have been proposed across a variety of mass scales in order to address anomalies in precision measurements and to provide a window into the dark sector. Over the past decade, many experiments have probed and ruled out dark photons in the most promising regions of the parameter space for simple models. However, the majority of these searches rely on hadronic production modes which, in some models, are significantly suppressed. The EIC's asymmetric beam energies offer a unique collision kinematics to mount a search for dark photons through purely leptonic production and decay modes. I will discuss the prospects for this measurement and a brief review of other related studies that can be undertaken at the EIC.

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