

Abstract Submitted
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Cornell Dark Photon Search¹ JAMES ALEXANDER, Cornell University, YUICHI KUBOTA, University of Minnesota, MAXIM PERELSTEIN, DAVID RUBIN, PETER WITTICH, Cornell University, BOGDAN WOJTSEKHOWSKI, Jefferson Laboratory — We report on the concept and preliminary design of a search for dark photons. The A' gauge boson of a nonstandard U(1) gauge symmetry (dark photon) may be produced in association with a normal photon in e^+e^- annihilation via $e^+e^- \rightarrow \gamma A'$. In the proposed experiment, the 5 GeV e^+ beam produced in Cornell's synchrotron is incident on a fixed target; following detection of the real photon, the A' is reconstructed as a missing mass. This search strategy is wholly independent of the A' decay channels. The sensitivity in A' mass and kinetic coupling constant will be discussed.

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