

# Sub-GeV Dark Vector Bosons and their Impacts on Cosmology

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The purpose of this presentation is to recognize the effects of electromagnetic energy injection into the early Universe from decaying sub-GeV dark vectors. Decay widths and energy spectra for the most prominent channels in the sub-GeV region are calculated for various dark vector models. The models include the kinetic mixing of the dark photon with the Standard Model photon,  $U(1)_{A'}$ , a dark vector boson which couples to the baryon minus the lepton current,  $U(1)_{B-L}$ , and the last three are dark vector bosons which couple one lepton's current minus a different lepton's current,  $U(1)_{L_i-L_j}$  where  $i, j = e, \mu, \tau$ . Measurements from Big Bang Nucleosynthesis and the Cosmic Microwave Background are used to constrain the lifetime, mass and coupling constant of the dark vectors.

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## Please select: Experiment or Theory

Theory

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