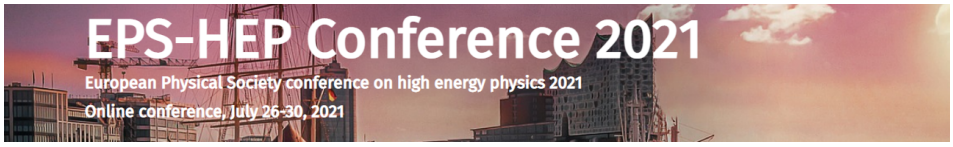

Contribution ID: **1074** Type: **Parallel session talk**

Searching for dark photon dark matter in the third observing run of LIGO/Virgo

Monday 26 July 2021 11:40 (20 minutes)

We report results from a search for ultralight dark photon dark matter using data from the third observing run of Advanced LIGO and Virgo. This type of dark matter could directly couple to the interferometers and cause a time-dependent quasi-sinusoidal force on the mirrors proportional to the total proton plus neutron number, or just neutron number. We describe two methods to search for this interaction, one that cross correlates data from different detectors, and another that varies the analysis coherence time to account for the expected signal frequency spread and looks for excess power in each detector. We also compare our sensitivity to those from existing direct dark matter experiments for a wide range of dark photon masses.

Collaboration / Activity

LIGO, Virgo and KAGRA

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