

# New Results from the Heavy Photon Search Experiment

*Thursday 30 March 2023 14:00 (15 minutes)*

The Heavy Photon Search experiment (HPS) at the Thomas Jefferson National Accelerator Facility searches for electro-produced dark photons.

We present results from the 2016 Engineering Run consisting of 10608/nb of data for both the prompt and displaced vertex searches.

A search for a resonance in the  $e^+e^-$  invariant mass distribution showed no evidence of signal, in agreement with previous searches. The search for displaced vertices showed no evidence of excess signal over background in the masses between 60 and 150 MeV, but had insufficient luminosity to limit canonical heavy photon production. HPS has taken high-luminosity data runs in 2019 and 2021 that will explore new dark photon phase space. We also present plans for model specific interpretations of our data in the future, one example being SIMPs.

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**Session Classification:** SESSION 7: Searches at Accelerators (CHAIR: Jay Hauser - UCLA)

**Track Classification:** Dark matter searches at accelerators