2020 Fall Meeting of the APS Division of Nuclear Physics

Search for Physics Beyond the Standard Model at the Jefferson Lab Eta Factory. IGAL JAEGLE, on behalf of the JEF group, Thomas Jefferson National Accelerator Facility — The Hall D Jefferson Lab Eta Factory (JEF) will start to collect data in couple of years with the detectors build for the GlueX and the PRIMEX-D experiments, and a new version of the forward calorimeters made of the old lead glass and new PbWO<sub>4</sub> crystals, currently assembled, improving dramatically the angular and the energy resolutions between  $0.1^{\circ}$ and  $3^{o}$  polar angles. We will review the JEF Physics Beyond the Standard Model (BSM) program: axion-like pseudo-scalar, dark scalar, dark (pseudo)-vectors, and dark matter can be searched in  $\pi^0$ - and  $\eta$ -meson decays but also in the Primakoff and the Compton processes over a wide mass range from few  $MeV/c^{2}$ 's to few  $GeV/c^{2}$ 's. We will discuss the JEF expected sensitivities on the the axion-like pseudo-scalar couplings to electron and photon, on the dark (pseudo-)vector couplings to photon and quark, and the dark scalar couplings to electron and quark.

> Igal Jaeglé ijaegle@jlab.org Thomas Jefferson National Accelerator Facility

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