

**Rare decays and new physics at the Jefferson Lab Eta Factory.** IGAL JAEGLÉ, on behalf of the GlueX Collaboration, Thomas Jefferson National Accelerator Facility — The Hall D Jefferson Lab Eta Factory (JEF) will collect  $500 \text{ pb}^{-1}$  of data at high incident photon-beam energies with the GlueX apparatus and an upgraded Forward Calorimeter (FCAL-II), which consists of a  $1 \text{ m}^2$   $\text{PbWO}_4$  crystal insert in the central region of the existing FCAL. The JEF physics program will study the  $\eta^{(\prime)}$ -meson rare decays and search for sub-GeV dark gauge bosons (vectors, scalars, axion-like pseudo-scalars) up to  $1 \text{ GeV}/c^2$  in these rare  $\eta^{(\prime)}$ -meson decays and also in direct photoproductions. The JEF physics program will be presented.

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