Vladimir Berdnikov on behalf of CCAL group

Lead Tungstate Compton Calorimeter for PrimEx-η experiment at Jefferson Lab

A precise electromagnetic calorimeter consisting of 140 lead tungstate (PbWO) scintillating crystals was constructed for the PrimEx-η experiment at Jefferson Lab. The calorimeter was integrated into the data acquisition and trigger systems of the GlueX detector and used in the experiment to reconstruct Compton scattering events. The experiment started collecting data in the spring of 2019 and acquired the full required statistics. The calorimeter served as a big-scale prototype for the next HallD instrumentation upgrade that started in 2023. The detector construction project of PWO crystals-based 1600 calorimeter towers insert (ECAL) of the Forward Calorimeter (FCAL) of the GlueX detector. In the talk, I will present the design and performance of the Compton Calorimeter and lessons learned during the transition to ECAL assembly.