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Probing the high-energy nuclear initial state and nuclear quantum fluctuations using ultra-peripheral heavy-ion collisions with the CMS detector[1] DANIEL TAPIA TAKAKI, University of Kansas, CMS COLLABORATION COLLABORATION — The CERN Large Hadron Collider serves as a photon-nucleus, photon-proton and photon-photon collider at unprecedented energies. In particular, the study of vector meson and dijet photoproduction has resulted in new information on nuclear effects beyond the ordinary nuclear parton distribution functions. In this talk, we will discuss recent results on ultra-peripheral heavy-ion collisions using the CMS detector. Particular attention will be given to recent studies that shed light on the high-energy nuclear initial state and nuclear quantum fluctuation, and how the studies of UPCs are paving the way for an exciting program at electron-nucleus colliders.

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Daniel Tapia Takaki
University of Kansas

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