

Abstract Submitted  
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**Searching for gamma-ray counterpart to the neutrino event IC201114A in Fermi-LAT data** ISABELLA GUILHERME, Columbia College, Columbia University, QI FENG, RESHMI MUKHERJEE, Barnard College, Columbia University, VERITAS TEAM<sup>1</sup> — High-energy neutrinos and gamma rays are two important messengers of extreme astrophysical environments, and individual flaring  $\gamma$ -ray blazars offer a promising opportunity for the identification of neutrino emitters. The neutrino event IC201114A was detected by IceCube on 2020-11-14 in the vicinity of the known  $\gamma$ -ray source 4FGL J0658.6+0636. To better understand the  $\gamma$ -ray variability of this source and to search for any temporal correlation between the IceCube event and  $\gamma$ -ray emissions, we analyzed  $\gamma$ -ray observations of 4FGL J0658.6+0636 over the timescales of 1 day, 1 month, 6 months, 1 year, 5 years and 10 years prior to the event with the Large Area Telescope (LAT) onboard NASA's Fermi Gamma-ray Space Telescope. We found neither evidence for strong  $\gamma$ -ray variability nor a significant detection in the time windows up to 1 year prior to the IceCube event. The lack of temporal correlation between gamma rays from 4FGL J0658.6+0636 and the neutrino event could suggest that the neutrino event is not from this source or that the gamma rays are absorbed in the emitting region. Regular monitoring of this source and timely followup observations of future IceCube events will continue to search for multi-messenger emission from potential cosmic accelerators.

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