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Searching for Neutrinos in KamLAND in Coincidence with the Brightest Gamma Ray Burst of All Time (BOAT)

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In October 2022, gamma-ray telescopes observed an extremely bright gamma-ray burst, GRB221009A. This event was quickly heralded as the brightest GRB of all time (BOAT) by several metrics. Followup searches for neutrino emission were also performed with the IceCube detector. In this talk, I will present the results of an analysis searching for low-energy antineutrino emission from GRB221009A in the KamLAND neutrino detector. KamLAND provides unique sensitivity to electron antineutrinos between 1.8 and 500 MeV, enabling multimessenger searches at these energies. For various time windows surrounding GRB221009A, we search for antineutrinos coincident with the GRB. No significant antineutrino excesses were observed, but assuming different source emission spectra, we place upper limits on the neutrino flux from this unique astrophysical event, and compare these results with IceCube's analysis.

Mini Symposia (Invited Talks Only)

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