

[구ID-13] The Low-Latency Search for Gravitational Waves from Compact Binary Coalescence

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During the summer of 2010, the first low-latency search for gravitational waves from compact binary coalescences was performed using the LIGO and Virgo instruments. The aim was to provide triggers for follow-up by electromagnetic telescopes. In this presentation we will describe the low-latency pipeline used to produce these triggers, including the time-delay-based procedure used to localize them on the sky.

[구ID-14] Comparison Study of Extensive Air Shower Simulations with COSMOS and CORSIKA

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Ultra-high energy cosmic rays(UHECRs) refer cosmic rays with energy above 1018eV. UHECR experiments have employed air shower simulations to quantify the properties of cosmic rays. Using COSMOS and CORSIKA, we have produced a library of over 15000 thinned extensive air shower(EAS) simulations with the primary energies ranging from 1018.5eV to 1020eV and the zenith angle of primary cosmic ray particles from 0 to 45 for proton and iron primaries. We have compared the results from CORSIKA and COSMOS. The comparison has shown perceptible differences in the ground distributions, longitudinal distributions, Calorimetric energy, and Xmax distributions. We have also measured the detector response evaluated using GEANT4 simulations. Here, we discuss S(800), i.e. the signal at a distance of 800 m from the shower core, as the primary energy estimator and present the lateral distribution function(LDF) with S(800).