

Study of water Cherenkov detector to determine air shower arrival directions with accuracy

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In recent years, a few groups have reported detections of gamma rays in the 100 TeV region from astronomical objects in the galaxy using extensive air shower arrays.

These observations have certainly taken a new step in the research of cosmic-ray acceleration mechanisms.

Several spread TeV gamma-ray sources have been observed in the galaxy.

To study the acceleration mechanisms, it is important to investigate a correlation between gamma-ray source and molecular cloud and to identify the exact gamma-ray emission region.

In extensive air shower experiments, an arrival direction of a cosmic ray is determined by estimating the shape of its air shower front based on a detected secondary particle density distribution and detection time.

Here, we report a study on shapes of water Cherenkov detector to determine arrival directions of air showers with good accuracy.

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Collaboration

other Collaboration

Subcategory

Experimental Methods & Instrumentation

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