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Neutron Tagging Technique in Super-Kamiokande

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Abstract content

One of the physics goals in SK-III is the observation of relic supernova neutrinos from the identification of their electron anti-neutrino component. Application of the delayed coincidence method benefits as a powerful tool in the selection of an electron anti-neutrino with largely reduced background. This selection is accomplished by detecting both a positron and a neutron created in the inverse beta decay. In this session, the technique of neutron tagging in Super-Kamiokande, a water Cherenkov detector, is reported with a newly designed trigger module together with the deployement of an apparatus of Am/Be-incorporated BGO crystal. Moreover, 2.4 liters acrylic vessel containing 0.2 % GdCl3 solution is prepared to study the neutron tagging efficiency by Gadolinium: Am/Be-incorporated BGO crystal is installed at the center of the above vessel. And this result is also presented in the session.

If this papers is presented for a collaboration, please specify the collaboration

Super-Kamiokande Collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 5 (HE part 2), pages 1421-1424

Primary author(s) :   Dr. WATANABE, Hideki (Kamioka Observatory, Institute for Cosmic Ray Research, The University of Tokyo)

Presenter(s) :   Dr. WATANABE, Hideki (Kamioka Observatory, Institute for Cosmic Ray Research, The University of Tokyo)

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