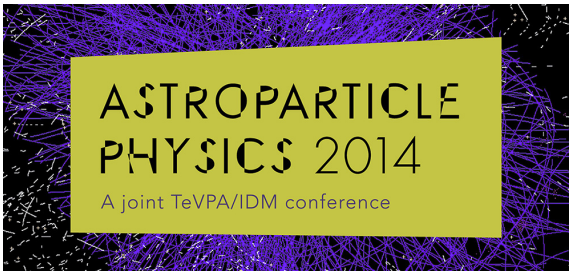

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A search for partially contained neutrino induced particle showers with IceCube

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Recent results from IceCube show evidence for a diffuse, highly energetic flux of astrophysical neutrinos. The analysis to select neutrino candidate events employ veto techniques which use the outer part of the detector to suppress the atmospheric muon background. Shower-like events comprise an important part of observed evidence for extraterrestrial neutrino induced events for the veto search. However, the veto search only identifies neutrino induced shower-like events that are fully contained. The analysis presented here demonstrates the feasibility of identifying shower-like events of all neutrino flavors with interaction vertices at the edge of the instrumented array, with the use of IceCube data from the years 2010/2011. The effective volume for detecting shower-type events is increased by a factor of almost two compared to previous shower-type event searches that use the outer detector parts as a veto against incoming tracks.

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