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Seminar

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# The IceCube Neutrino Observatory: Opportunities for Astroparticle Physics

Neutrino astronomy offers the ability to pinpoint high energy hadronic processes in the universe including locations of cosmic ray acceleration. After the description of the "Cosmic particles flowchart", I will discuss the IceCube project. The IceCube neutrino observatory, under construction at the South Pole, consists of three sub-detectors: a 3-dimensional array of digital optical modules deployed deep in the ice, the AMANDA neutrino telescope and the surface array IceTop. I will summarize results from searches for cosmic neutrinos with the AMANDA telescope and review expected sensitivities for IceCube at various installation phases. Reliability and robustness of installation at the South Pole has been demonstrated along the past five construction seasons. On the base of the experience gained in operations at the South Pole, the extension of IceCube at the extreme ends (low and high) of the energetic region can be accomplished. I will describe the IceCube Deep Core project and connected new opportunities for astroparticle physics.

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