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Search for high-energy neutrinos from dust obscured Blazars

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The recent discovery of high-energy cosmic neutrinos by the IceCube neutrino observatory opens up a new field in physics, the field of neutrino astronomy. Using the IceCube neutrino detector we plan to search for high energy neutrinos emitted from Active Galactic Nuclei (AGN). AGN are believed to be one of the most promising sources for emitting these weakly interacting particles. We discuss a specific type of AGN which we plan to investigate in more detail with data obtained by the IceCube observatory. The main properties of the AGN in which we are interested are given by a high energy jet which is pointing in our line of sight, called Blazars, and in particular the ones that are obscured by nearby dust. The jet-matter interaction is expected to give an increased neutrino production. The properties of this specific type of AGN are expected to give very distinct features in the electromagnetic spectrum, which are discussed in detail.

Collaboration

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194

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