

Abstract Submitted
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Trinity: An instrument to detect cosmogenic neutrinos with the Earth skimming technique NEPOMUK OTTE, Georgia Institut of Technology — The predictions of the cosmogenic-neutrino flux at 10^9 GeV depend on the composition of the primary flux of cosmic-rays above 10^{10} GeV, which is a long standing question. It is, therefore, no surprise that the hunt to detect the first cosmogenic neutrino is a hot topic in astroparticle physics. But pushing the experimental sensitivity into the predicted flux region is a challenge. A major obstacle is to obtain a large enough acceptance while keeping costs of experiments at reasonable levels. I have performed a conceptual design study of a dedicated array of Cherenkov telescopes that uses the Earth skimming technique to detect tau neutrinos. The studies show that a fairly small Cherenkov telescope system is sufficient to reach sensitivities that are competitive with other proposed neutrino experiments in the same energy range, like ARA and ARIANNA, and outperforms them in terms of costs. In this talk I present details of the design study and discuss the proposed array of Cherenkov telescopes, which I named Trinity.

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