

AN INDIRECT SEARCH FOR WIMPS WITH SUPER-KAMIOKANDE

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A potential source of high energy neutrinos is the annihilation of Weakly Interacting Massive Particles (WIMPs) collecting in gravitational potential wells such as the centers of the earth, the sun, or the galaxy. A search for such a WIMP annihilation signal using the Super-Kamiokande (Super-K) detector is presented. Super-K observes 1.1 upward through-going muons per day. These events are caused by high energy (typical $E_\nu \sim 100$ GeV) neutrino interactions in the rock under the detector, and are generally consistent with the expected flux from atmospheric neutrinos. No enhancement of the neutrino signal due to WIMP annihilation is seen, so upper limits on the possible flux of WIMPS are set. These limits are compared to those from other such indirect searches, and a model-independent method is used to compare the Super-K results with direct-detection WIMP experiments.