

Abstract Submitted  
for the APR06 Meeting of  
The American Physical Society

**Updated RICE Bounds on Ultrahigh Energy Neutrino fluxes and interactions** SHAHID HUSSAIN, Bartol Research Institute, DOUGLAS MCKAY, University of Kansas — We explore limits on low scale gravity models set by results from the Radio Ice Cherenkov Experiment's (RICE) ongoing search for cosmic ray neutrinos in the cosmogenic, or GZK, energy range. The bound on,  $M_D$ , the fundamental scale of gravity, depends upon cosmogenic flux model, black hole formation and decay treatments, inclusion of graviton mediated elastic neutrino processes, and the number of large extra dimensions,  $d$ . We find bounds in the interval  $0.9 \text{ TeV} < M_D < 10 \text{ TeV}$ . Values  $d = 5, 6$  and  $7$ , for which laboratory and astrophysical bounds on LSG models are less restrictive, lead to essentially the same limits on  $M_D$ .

Shahid Hussain  
Bartol Research Institute

Date submitted: 06 Jan 2006

Electronic form version 1.4