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(VT Physics)

*Submarine neutrino communication*

**Monday, 9/28**

**2:30 P.M.**

**304 Robeson**

I will discuss the possibility to use a high energy neutrino beam from a muon storage ring to provide one way communication with a submerged submarine. Neutrino interactions produce muons which can be detected either, directly when they pass through the submarine or by their emission of Cerenkov light in sea water, which, in turn, can be exploited with sensitive photo detectors. Due to the very high neutrino flux from a muon storage ring, it is sufficient to mount either detection system directly onto the hull of the submersible. The achievable data transfer rates compare favorable with existing technologies and do allow for a communication at the usual speed and depth of submarines.

**Particle, Nuclear & Astronomical Sciences Seminars**