University of Victoria

PHYSICS AND ASTRONOMY
VISPA
SEMINAR
(In Person)

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SFU

"The Pacific Ocean Neutrino Experiment"

Abstract

"Every time researchers have pushed the energy boundary in particle physics we have found something new about our Universe. Recently, IceCube has demonstrated that Neutrino Telescopes can use neutrinos from the cosmos as excellent tools to continue this exploration. The true potential of this field, however, remains to be realized due to limited observations of neutrinos at the highest energies. To unlock this potential, advanced detectors are needed that will push the forefront of the cosmic frontier, revealing new knowledge of extreme astrophysical phenomena, including through multi-messenger follow-up programs, and testing fundamental physics at scales well beyond those reachable by Earth-bound accelerators. The Pacific Ocean Neutrino Experiment (P-ONE) is a proposed initiative to construct one of the largest neutrino telescopes deep in the northern Pacific Ocean off the coast of British Columbia. To overcome the challenges of a deep-sea installation, we have deployed two pathfinder mooring lines STRAW and STRAW-b in 2018 and 2020. These provide continuous monitoring of optical water properties at a potential detector site in the Pacific. In this talk I will cover results from these pathfinders and discuss the status of P-ONE."

Wednesday, April 19, 2023

2:00 p.m. PDT

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