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Pacific Ocean Neutrino Experiment (P-ONE): pathfinder and prototype line development

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The Pacific Ocean Neutrino Experiment (P-ONE) is a new initiative between Canadian and German groups that aims to construct a large volume neutrino telescope in the Northeast Pacific Ocean and, in this way, complement the sky coverage of the existing or under construction neutrino telescopes. As part of the NEPTUNE observatory, established by ONC, two pathfinders were built and deployed at the Cascadia Basin node, which will host P-ONE. The first pathfinder STRAW (STRings for Absorption length in Water), deployed in June 2018, has measured the optical properties of the deep Pacific Ocean. Besides that, it is also monitoring the in-situ background rates due to K40 decay and bioluminescence. STRAW-b, the second pathfinder, aims to further characterize the deployment site with its specialized modules, among which are two LiDARs, three spectrometers, and a muon tracker. The talk covers technical details and preliminary results of both pathfinders and concludes with an P-ONE outlook.

Collaboration name

P-ONE

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