

P-ONE: pathfinder and pilot phase

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The Pacific Ocean Neutrino Experiment (P-ONE) initiative strives to push the boundaries of high-energy astronomy by creating a next-generation, large-scale neutrino telescope. In this process, P-ONE benefits highly from an already existing deep-sea infrastructure, the NEPTUNE observatory, established and in operation by Ocean Networks Canada (ONC). NEPTUNE provides power and data connections to various nodes, accessible by distinct experiments. One of these nodes, located at the Cascadia Basin in a depth of 2660 meters, is selected to host P-ONE. At this site, two pathfinder experiments, the STRAW projects, have been successfully deployed and connected in 2018 and 2020, respectively. These pathfinder mooring lines shared the goal to measure the optical and background characteristics of the Cascadia Basin. The P-ONE prototype line is the successor of these mooring lines and the next step towards the vision of P-ONE. Its main objective lies in constructing and deploying a first P-ONE detector mooring line as proof of concept of the individual components and new technologies. We present preliminary results of the pathfinder missions and the present design of the P-ONE prototype line.

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