

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

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# P-ONE – detector concept

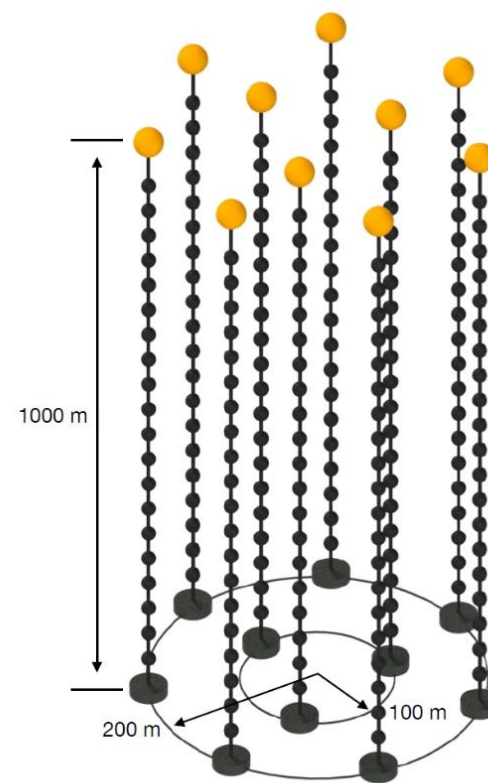
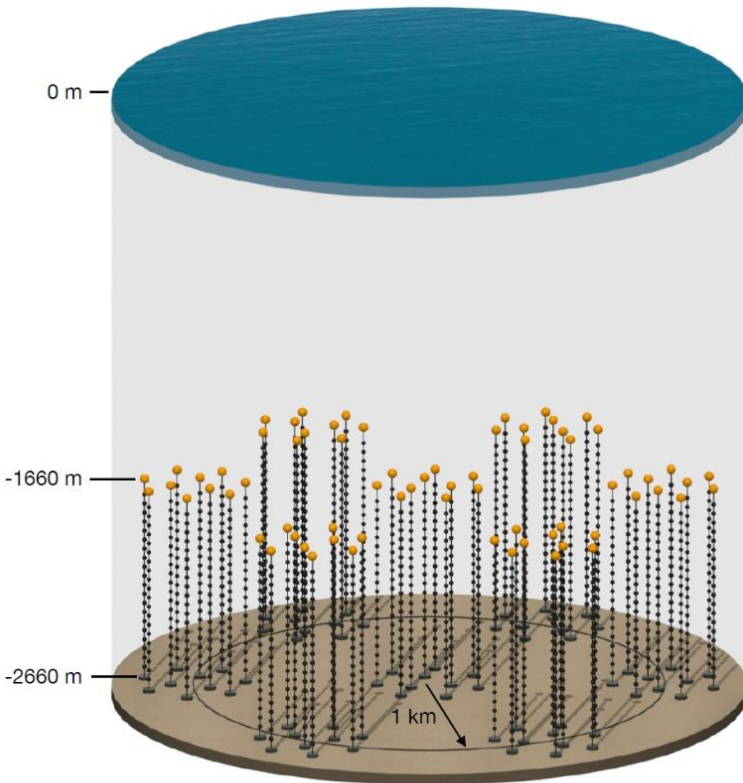


Image | K. Holzapfel

- Pacific Ocean Neutrino Experiment (P-ONE):
  - Proposed neutrino detector in the Pacific Ocean
  - Clustered structure, focusing on horizontal tracks, PeV scale
  - Around 7 Clusters with 10 moorings each
  - Roughly 20 modules per mooring
  - Connection to NEPTUNE observatory est. by ONC
- Milestones
  - Deployment of two pathfinders, STRAW and STRAW-b
  - **Now:** Prototype P-ONE mooring line
- **Please note:** Illustrations are **preliminary** studies!

# P-ONE – prototype line concept

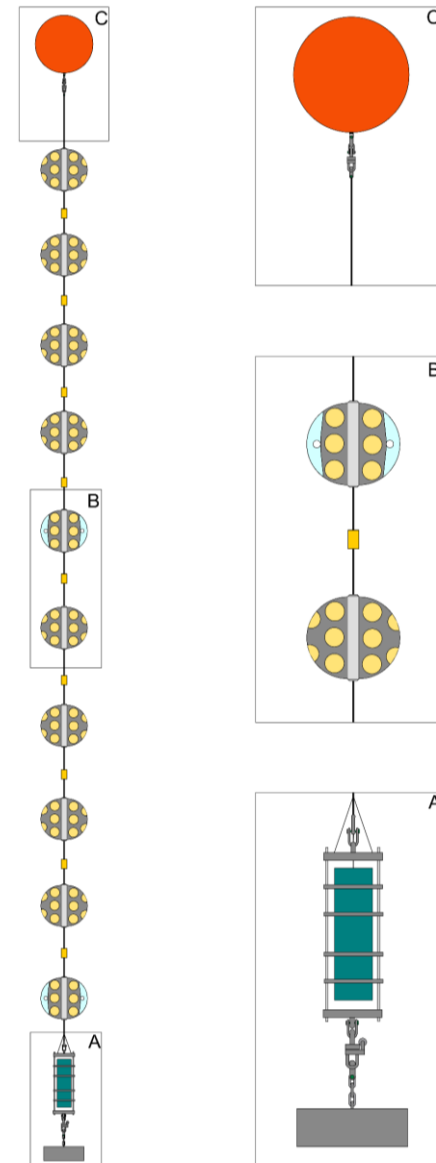
The prototype line shall be the blueprint for the final P-ONE moorings - key features:

- Envisioned mooring length of 750-1000 m
- Combined backbone - electric-optical cable with incorporated strain members

Instrument types:

- P-ONE - Optical Module
- P-ONE - Calibration Module

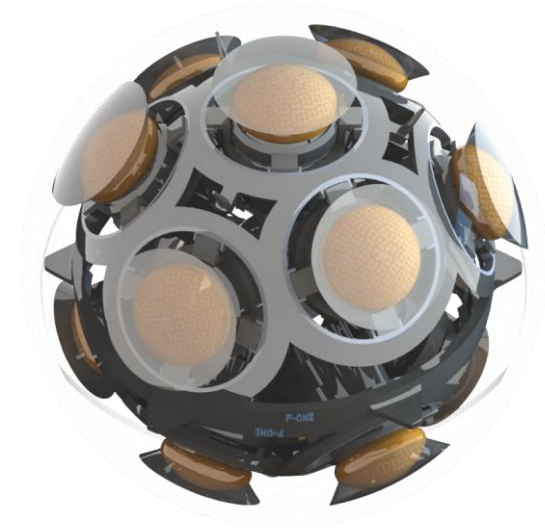
**Please note:** Early development stage, all illustrations are **preliminary** studies!



# P-ONE – prototype line modules

## Optical Module | Development in progress

- PMT selection ongoing at University of Alberta and Technical University Munich
- Readout technology benefits from STRAW projects experience
- Modular internal structure allows replacement of individual components
- Transparent reflector pads to increase overall light detection efficiency



## Calibration Module | Adapted POCAM

- Calibration module will be branch of POCAM (ICRC2021 #578)
- Developed pulse driver and in-situ monitoring electronics directly adaptable
- Enclosure identical to the optical modules
- Option to integrate PMTs under investigation



## Thanks for your attention!

For more information check ID #1270 (QR code) and other P-ONE related contributions (#578, #594, #1138, #1272).

Shortcut to  
contribution

