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Evaluation of the discovery potential of an underwater Mediterranean neutrino telescope taking into account the estimated directional resolution and energy of the reconstructed track

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We report on the development of search methods for point like and extended neutrino sources taking into account the resolution of an underwater Mediterranean neutrino telescope to reconstruct the direction as well as the energy of the detected muon tracks, on a track by track basis. We present results on the potential of a very large volume neutrino telescope to discover neutrino sources. The developed techniques offer an improvement on the telescope's discovery flux sensitivity up to a factor of 2. We also report comparisons between different telescope configurations containing the same number of Optical Modules.

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