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The MEMPHYS Project

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MEMPHYS is a proposed megaton-scale Water Cherenkov experiment to be performed deep underground. It is dedicated to nucleon decay searches, neutrinos from supernovæ, solar and atmospheric neutrinos, as well as neutrinos from a future Super-Beam or β-Beam to measure the mixing angle θ13, the CP violating phase δ and the mass hierarchy. We will summarize the latest studies on the physics reach of MEMPHYS and on possible candidate sites for its installation in Europe.
New photodetection and data acquisition solutions, such as grouped readout systems, are mandatory for very large-scale detectors, to improve their feasibility and cost effectiveness. One R&D item currently being carried out is MEMPHYNO, a small-scale prototype with the main purpose of serving as a test bench for new detection and data acquisition devices. Its status and perspectives will be shown.

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