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LAGUNA and LBNO: Towards the next generation neutrino observatory in Europe

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I'll describe the LBNO strategy to address mass hierarchy and CP phase measurements as well as the astro particle and nucleon decay. This strategy is the outcome of the European design studies LAGUNA and LAGUNA-LBNO. The LBNO approach is based on a staged experiment using a conventional beam and a LAr detector in double phase operation together with a magnetized iron detector at very long baseline of 2300 km and deep underground in its first stage. The new facility is a unique tool to measure mass hierarchy at the 5 sigma level over the whole phase space, independent of the theta 23 octant. The LBNO experiment can be scaled and adapted to the need physics tells us. The baseline of 2300km is perfect for the neutrino factory.

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