

- **LBNO, to be located underground at Pyhäsalmi 2300km away from CERN, has truly unique scientific opportunities:**
 - ➔ all transitions ($e/\mu/\tau$) measurable in neutrino/antineutrino in a single experiment
 - ➔ a fully conclusive mass hierarchy determination, in a cleaner and more significant way than any other methods/proposals
 - ➔ a very good chance to find CPV with the spectral information providing unambiguous oscillation parameters sensitivity. With 10 years at 700kW SPS and 20 kton LAr +MIND (=initial phase), the reach is 30%(70%) CPV coverage at 3σ (90%) C.L. This step will inform future investigations (e.g. systematics).
 - ➔ $>x10$ better sensitivity in several nucleon decay channels, competitive to HK Lol.
 - ➔ detection of several astrophysical sources (SN,...) and fresh new look at atmospheric neutrinos with high granularity and resolution (atm tau app., atm MH, ...).
- **LBNO defines a clear upgrade path** (long term vision / incremental approach) to fully explore CPV. E.g., a three-fold exposure yields 75% CPV coverage at 3σ C.L. !! Comparable to T2HK Lol and better than “other” proposals with conventional beams. Baseline adopted by NF community and LBNO has magnetized detector in initial phase.
- We are submitting an expression of interest to CERN SPSC. The proposal offers an attractive and effective approach to move neutrino physics forward (in Europe and in a global context) and has a long term vision. **Eol already largely endorsed by the community and open to anyone willing to contribute !**