

Neutrino group wish-list

1) CR CNRS position

Justification: Following the recommendations of the LPNHE and IN2P3 Scientific Councils the LPNHE-Neutrino group is currently fully involved in the Japanese neutrino program. This program consists in continuation of the **T2K** experiment (T2K-II project), where we have leading roles in the near detector **ND280 Upgrade**, and in preparation of the **Hyper-Kamiokande** (HK) project, the experiment of the next-generation which has recently been approved in Japan. The group is now also involved in the HK experiment with an important technical contribution (clock distribution and time synchronization system).

The new CNRS CR researcher will participate in the installation and commissioning of the ND280 Upgrade at J-PARC and will lead the analyses of the T2K-II data, with the goal of reducing the systematic uncertainties in on-going and future long-baseline experiments, also contributing to the joint analyses of T2K with Super-Kamiokande and NOvA measurements. In addition, the full participation in the HK project will require to enlarge the group experience to the study of solar, atmospheric and supernovae neutrinos. The new group member will play a leading role also in this longer-term activity.

2) Budget request for T2K-upgrade in 2022

We would need about **40 kEuros** to finalize our hardware contributions to the ND280 upgrade. About **50 kEuros** would be required for scientific trips to participate in the integration and commissioning at J-PARC.

3) Budget request for Hyper-Kamiokande in 2022

To finalize the on-going R&D towards HK we would need about **30 kEuros**. We have submitted applications for funding via a new IRL with Univ. of Tokyo (ILANCE) in order to get a PhD grant starting from September,2021. If not successful, we would ask for a **CNRS PhD grant** starting from September,2022.