

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 getting 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 2021

Assuming our contribution to the ND280 upgrade goes as expected in 2020 and we spend about 100 kEuros allocated this year for material and equipment, we would require another **60 kEuros** to finalize our hardware contributions. 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 2021

The on-going R&D towards HK would require about **20 kEuros**. We have submitted applications for funding in order to get a PhD grant starting from September,2020. If not successful, we would ask for a **CNRS PhD grant** starting from September,2021.