

The LArGER project implying physicists from IPNL and ETh Zürich as well as electronics engineers is a R&D work on liquid argon TPC aiming at the development and characterization of the detector active part (either wires or LEM – Large Electron Multiplier – planes) and of the complete electronic readout chain based on “smart sensors” distributed and synchronized acquisition innovative technologies. This development will allow to face the prospective requests of large LAr detectors foreseen in the future (like in the GLACIER project) for dark matter searches, neutrino physics and supersymmetry studies, in terms of technical performances (data rate, on-line processing on low cost embedded processors), of technology standards (with the increase of telecommunication networks) and of low cost. In such programmes liquid argon TPC offer the most promising perspectives with their high event reconstruction capabilities, their high spatial and energetic resolution and their large electron identification power. In particular they are ideal in $\nu\mu \rightarrow \nu e$ neutrino oscillations experiments for mixing angle θ_{13} measurements and CP violation effects studies in neutrino sector. They can be placed either in close or in far position. Developments in electronics rely on a firm basis in IPNL both in micro-electronics and in digital electronics with the recent construction of the OPERA DAQ system. The funds requested to the ANR will allow to acquire an autonomous know-how in the field of liquid argon detector technology which are a key element in the future of neutrino and astro-particle physics. They will also be used for the construction of a detector prototype profiting from the expertise of EThZ gathered during the ICARUS experimental programme.