The LIA* JoULE, initiated in 2005, is dedicated to research in the areas of neutrino properties, dark matter, ultra heavy ions and low radioactivity measurements. This agreement has been signed by CNRS-IN2P3 and CEA-DSM, the JINR Dubna and RFBR (Russia) and recently the CTU (Czech Republic).

* Laboratoire International Associé - International Associated Laboratory

**JoULE Agreement**

Experiments involved:
- NEMO-3 experiment for neutrinoless double beta decay search, and its successor SuperNEMO, and the BiPo detector
- EDELWEISS-2 experiment on direct detection of non baryonic dark matter with cryogenic germanium bolometers and the next phase, the EURECA experiment
- TGV-2 low background spectrometer for studying rare nuclear processes as for example 2EC(2ν) and 2EC(0ν) capture by $^{106}$Cd
- SHIN experiment directed to search for SuperHeavy elements In Nature
- Low background HP Ge detector for gamma ray spectroscopy

**JoULE Goals**

- To promote exchange between France, Russia and Czech Republic for underground physics research
- JINR and CTU physicists contribute to caracterize the environment of the LSM (measurement of neutron and radon fluxes)
- JINR and CTU physicists participate in low-background material assay for materials used in present and future experiments at LSM
- Development and construction of neutron detectors, radon detectors and muon detectors by JINR and CTU
- The LSM hosts and provides the facilities to offer the best possible working conditions to JINR and CTU physicists
- Joule agreement sets the basis for the JINR and CTU partnership in the extension of the LSM

**JoULE Experiments involved**

- Development, construction and installation in LSM of a $^3$He neutron detector for thermal neutron monitoring (JINR)
- Development, construction and installation in LSM of a radon detector with a sensibility of a few mBq/m$^3$ (JINR)
- Construction and installation in LSM of an alpha-spectrometer (JINR)
- LSM provides 12 visitors months per year

**JoULE Achievements**

- Development, construction and installation in LSM of a $^3$He neutron detector for thermal neutron monitoring (JINR)
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