



Search for Baryon and Lepton number Violations International Workshop

September 20-22, 2007
Lawrence Berkeley National Lab

Scope of Workshop

Baryon and Lepton number violation has become an integral part of the current discussions of physics beyond the standard model, specifically in connection with understanding the nature of neutrinos, origin of matter in the Universe as well as possible grand unification of matter and forces. The goal of the workshop is to have a comprehensive discussion of the B and L violating processes and particularly of (B-L) violation as a probe of unification: the three different processes which are expected to be discussed extensively are nucleon decay, neutron oscillation, neutrinoless double beta decay and associated issues such as origin of matter, baryo- and leptogenesis, grand unification, nuclear physics related to these processes, and possible manifestations of B,L, and B-L violation in other observables and at LHC and ILC. New generation of nucleon decay, neutron oscillations, and neutrinoless double beta decay high-sensitivity experiments proposed in the framework of DUSEL might help to throw the light on the direction of new physics beyond the standard model and supplement the knowledge gained from imminent collider experiments.

A tentative list of Workshop topics to be covered includes:

- E-W SM sphaleron transition and violation of (B-L)
- role (B-L) in baryogenesis and cosmology
- role of (B-L) violation in models of leptogenesis
- relation of (B-L) with Left-Right Symmetry violation
- violation of global quantum numbers in extra-dim models
- status of (B-L)V in proton decay search and models
- review of proposed PDK search experiments in respect of (B-L)V
- (B-L) violating nucleon decays (like $n \rightarrow 3\nu$ and others)
- n - $\bar{n}$ oscillations models and expectations for osc. time
- n - $\bar{n}$ future experimental plans
- majorana neutrino searches and neutrinoless double beta decay
- sterile neutrinos
- mirror matter search ($n \rightarrow n'$)
- search for tau decays with (B-L) violation
- search for (B-L) violation in hyperon decays
- search for mirror matter at LHC and ILC
- searches of B, L, and B-L violation at LHC and ILC