

## Area Seminar

Title	On the Origin of Neutrino Mass and Lepton Number Violating Searches
Date and Time	20/01/2014 16:00:00
Speaker	Dr. Manimala Mitra
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Area	Theoretical Physics
Venue	Room No. 469
Abstract	<p>Proof of neutrino masses and mixing from a series of outstanding experimental efforts have opened a window to physics beyond the standard model of particle physics. There must be some underlying theory which explains the tiny electron volt neutrino masses. It is well known that seesaw mechanism has its success in explaining the smallness of neutrino mass. In this talk I will discuss about the origin of neutrino masses and the different rich phenomenological aspects, that the underlying theories offer. The Majorana nature of the light neutrinos can be probed through the observation of lepton number violating processes. I will discuss about the different lepton number violating searches both at non-collider and collider experiments, emphasizing mostly on neutrinoless double beta decay. Apart from the well-known light neutrino contribution, lepton number violating states from a beyond standard model theory can also give large contribution in this process. I will emphasize on the sterile neutrino contribution in neutrinoless double beta decay and the interesting correlation with the lepton number violating searches at collider.</p>