Chapter 10

Findings and Suggestions of the Thesis

In the energy budget of the universe it has been estimated that about 73% of our universe is Dark Energy, about 23% is occupied by Dark Matter and the usual Baryonic Matter occupy about 4%. Therefore the study of the nature of dark energy has become one of the most important topics in the field of fundamental physics. Therefore it may be a good idea to try to search for the hidden source of the dark energy which dominates the universe with positive energy density and negative pressure, and responsible to produce sufficient acceleration in late time evolution of the universe. So within the framework of Lyra Geometry while investigating cosmological models of our universe, we found the model universes behaves as a dark energy model universes which are consistent with the observational findings. It is seen that the displacement field in Lyra's Geometry, which is considered as a component of the total energy, plays the role of dark energy. In Lyra's Geometry, our universe seems to be dominated by cosmological constant type of dark energy. In most of the problems which we consider here are expanding through the evolution supporting the present day observational findings. Thus it is seen that our model behaves as a dark energy field universe. From our findings, we seem that Lyra Manifold itself contribute to dark energy consistent with the recent cosmological observations. Further study of such type of universe will be helpful for explaining the present accelerated expansion behavior of the universe.