PREFACE

The dissertation entitled, "Static and Non-static Cosmological Models in Einstein-Cartan Theory" is mainly devoted to the study of a non-static conformally flat spherically symmetric perfect-fluid distribution in Einstein-Cartan theory.

In recent years the Einstein-Cartan theory of space-time has attracted a lot of interest. From the cosmological standpoint the interest stems from the fact that non-singular cosmological models in Einstein-Cartan theory have been constructed explicitly. In most of these models the spin of the particles composing the fluid is assumed to be aligned along a particular direction.

In Chapter-I, we have discussed in brief the Einstein-Cartan theory, the structure equations of the Einstein-Cartan theory and the field equations where we have followed Trautman [70]. The comparison of Einstein's theory and the historical survey of the Einstein-Cartan theory up to date is also being made.

In Chapter-II a non-static conformally flat spherically symmetric perfect-fluid distribution in Einstein-Cartan theory is considered. We have obtained curvature forms, Ricci tensors and the scalar of curvature. The field equations are solved by adopting the Hehl's [16,17] approach.

We note that the field equations will reduce to the field equations obtained by Singh and Abdussattar [22] when $K = 0$ and the solution will reduce to the solution obtained by Kalyanshetti and Waghmode [11] when $t = 0$.