Preface

The impact of generalized functions on the Integral Transform has recently revolutionaries the theory of Generalized Integrals Transformations. L. Schwartz gives the Theory of Distributions in 1944-51.

Zemanian gives generalization of a number of commonly encountered integral transforms. His idea is to construct testing functions spaces which contain appropriate kernels of integral transforms and to extend the classical theories of such integral transforms to the duals of the corresponding testing function spaces. The theory thus developed is then applied to find generalized solution of partial differential equations and integral equations.

In fact, the space of distributions can be viewed as proper subspaces of certain Boehmians spaces. The concept of Boehmians was motivated by the Mikusinski' Operators particularly by the regular Operators introduced by T. K. Boehme.

The present dissertation is the outcome of the work carried out by me in the field of "Hankel Transformation, Distributions and Boehmians" at the Department of Mathematics,Shivaji University, Kolhapur.

This dissertation consists of two chapters,

The first chapter consists of some definitions and results which are useful for the development of the second chapter.

In the second chapter we have studied the testing function space $H_{c,\lambda}$, and its dual, Hankel type transform of distributions and its inversion theorem. Also we have seen the application of Hankel type transform to an integral equation.

Even though, Boehmians and its examples are introduced in chapter I. In future, we will consider Hankel type transform of Boehmians.

A triple numbering system is used for all Theorems, Lemmas and Formulae, the first two numbers indicates the sections in which these appear. For example: Theorem 2.2.1, Lemmas 2.2.1 and (2.2.1) are the first Lemma, first Theorem, and Formula respectively, appearing in the section 2.2.

References are given at the end and arranged in the alphabetical order.