Synopsis

Some Aspects of Pseudo algebraic Spaces

The aim of the Project is to study the Pseudo algebraic spaces (p-a spaces) which cover a wide range of existing algebraic and topological properties. A Pseudo algebraic space is defined to be a non-empty set having two types of structures - a Pseudo topological structure and a Pseudo algebraic structure. We then introduce the notion of sub p-a spaces, keeping it in mind that the notions of topological subspaces and subgroup go together. We have then defined a special kind of mappings from one Pseudo algebraic space to another. These mappings are counterparts of homomorphism in algebra and continuous function in topology. We call these mappings Pseudo algebraic homomorphisms. One of the purposes of this Project is to study the elementary properties of these Pseudo algebraic homomorphisms and form a basis for further study of p-a spaces.

We have defined Quotient p-topology, Quotient p-topological spaces, Quotient p-topological space equipped with the p-a structure, called Quotient p-a space.

We have defined Product p-topological spaces. A Product p-topological space equipped with p-a structure is said to be a Product p-a space.

We have introduced Bi-p-topological spaces as spaces equipped with two p-topologies. Pairwise separation axioms are discussed on it.

We have given some important examples and some essential properties of the spaces mentioned in our Project in order to make such study fruitful.

We have opened a new line of research introducing
p-topological structure and p-a structure in a p-a space and we hope, more interesting behaviour of p-a spaces will be explored in the general topology and group theory in future.

We have divided our project into six chapters in order to make systematic study of p-a spaces.

The first chapter is a general introduction where there is a brief discussion on the main topic to be discussed in the subsequent chapters.

The second chapter deals with Pseudo algebraic spaces. Pseudo topology, Pseudo topological space, Pseudo Normal set, Pseudo Continuity, Pseudo algebraic homomorphism, Pseudo Kernel of p-a homomorphism and Pseudo inverse are discussed in this chapter.

The third chapter is devoted to sub p-a spaces followed by some examples and elementary properties.

The fourth chapter incorporates Quotient p-a spaces. The notions of Quotient p-topology, Quotient p-topological spaces are introduced and illustrated with examples.

The fifth chapter deals with Product p-a spaces. Product p-topology, Product p-topological spaces and sub p-a spaces of Product p-a spaces are discussed.

The sixth chapter is devoted to Bi-pseudo topological spaces and Pairwise separation axioms are also discussed in this structure.

A wide class of algebraic and topological structures are amalgamated and we have studied in a more general situation. We have shown that in some particular situation e.g. in group structure some known results can be deduced as corollaries. We can hope that deeper study of such general situation would generalise some existing results and exploration of new results can also be expected.

***  ***  ***

II