

## PREFACE

*The present piece of work entitled “Construction in (Fibrewise) Proximity Spaces” is an outcome of researches carried out by me during the last few years.*

*The thesis comprises of seven chapters and a bibliography at the end. A list of symbols is placed immediately after the index and an index of mathematical terms used in the thesis follows the bibliography.*

*The work begins with a brief sketch of the general background of the theory of proximity spaces in the introductory chapter I. The chapter has been divided into several subsections exhibiting the motivation for the work presented in chapter III onwards. Chapter II is devoted to the prerequisites.*

Chapter III deals with specially classified fibrewise proximity spaces: these include fibrewise Hausdorff proximity space, fibrewise  $p$ -regular space, fibrewise completely regular proximity space and fibrewise normal proximity space.

Chapter IV of the present thesis is concerned with the notion of fibrewise proximal adjunction space. The concept of proximal retraction is dealt with and it has been proved that a proximal subspace of a separated proximity space  $X$  has an-extension iff  $Y$  is a proximal retract of  $X \cup_f Y$ , where  $X$  and  $Y$  are both proximity spaces.

Proximal function spaces are introduced in Chapter V. The collection of  $p$ -continuous maps  $f$  from  $X$  to  $Y$  is shown to be a separated proximity space.

In chapter VI, using the concept of  $R$ -proximity space, the theory of  $p$ -regular cover has been developed and the notion of proximal

*threads have been introduced. The main result of this chapter asserts that a  $x_p$ -family  $\xi$  is a  $x_p$ -ultrafilter if and if  $\xi$  is a thread. The study of distinguished thread is continued in chapter VII.*

*A study of absolute of the  $\mathcal{R}$ -proximity space has been made in the concluding chapter VII.*

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