

# LOOPS AND SMARANDACHE LOOPS

Payal Paul  
MA05C0014  
2007

In this dissertation the study of the notion of loops and Smarandache loops constructed using modulo integers is analyzed. Further substructures like subloop, normal loop, commutator subloop, associator subloop, left nucleus, right nucleus and middle nucleus which are subloops of a loop are studied in this dissertation. Smarandache loops and special types of loops like unique product loop, two unique product loop, Hamiltonian loop, diassociative loop, inner commutative loops etc are also studied. The main reference being: W.B. Vasantha, *Smarandache Loops*, American Research Press, (2002).

This dissertation has four chapters. Chapter one introduces the basic concepts of loops and their properties. Chapter two analyses the substructures in loops. Special identities in loops are studied in chapter three. Chapter four studies special types of loops and Smarandache loops.