JORDAN LOOPS AND JORDAN GROUPOIDS

W.B. Vasantha Kandasamy and V. Vaithiyanathan

In this paper, we introduce a new class of loops called Jordan Loops and generalize them to the concept of Jordan Groupoids. We prove that the class of Jordan loops is non-empty and show that for every prime number \( p, p > 3 \), we can construct a Jordan loop of order \( p + 1 \). We denote this new class of Jordan Loops by \( J_p \) and prove that every loop in \( J_p \) is a power associative loop and further, we prove that this Jordan loops \( J_p \) do not contain and Bruck loop or Moufang loop. We generalize this class of loops to Jordan Groupoids and denote them by \( G_p \). Here these Jordan Groupoids can be constructed for any \( p \), where \( p \) need not be a prime but will contain \( p + 1 \) elements. We show that the class of Jordan loop \( J_p \) is strictly contained in the class of Jordan Groupoids \( G_p \).