

## SMARANDACHE GROUPOIDS

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In this paper we introduce the concept of Smarandache groupoids (S-groupoids for short). Groupoids are the generalization of semigroups and non-associative semigroups are termed as a groupoid. A groupoid  $G$  is said to be a S-groupoid if it has a proper subset, which is a semigroup under the operations of  $G$ . Thus the Smarandache groupoids demands the substructure, which is associative to be present in it. We define Smarandache subgroupoids, Smarandache ideals in the groupoids, Smarandache homomorphism of groupoid and obtain some interesting results about them. The study of identities in any algebraic structure is an interesting concept. We obtain conditions for the S-groupoid to satisfy Bol identity, Moufang identity etc. Finally conditions for the groupoids to be alternative (right or left) is determined.

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