On $V^2$-semigroups*

Ze Gu
Department of Mathematics, South China University of Technology

Abstract

Let $S$ be a regular semigroup. Then an inverse transversal of $S$ is an inverse subsemigroup $T$ such that $|T \cap V(x)| = 1$ for every $x \in S$, where $V(x)$ denotes the set of inverses of $x$. Motivated by studying regular semigroups with inverse transversals, we want to know when $T$ is an inverse transversal of $V(T)$ for any inverse subsemigroup $T$ of $S$. In the course of investigating this problem, we give some new characterizations of orthodox semigroups. A new type of regular semigroups, namely $V^2$-semigroups, is introduced. Also we give a characterization of $V^2$-semigroups and investigate some properties of $V^2$-semigroups.