

ON  $k$ -RADICALS OF GREEN'S RELATIONS IN SEMIRINGS  
WITH A SEMILATTICE ADDITIVE REDUCT

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**Abstract**

We introduce the  $k$ -radicals of Green's relations in semirings with a semi-lattice additive reduct, introduce the notion of left  $k$ -regular (right  $k$ -regular) semirings and characterize these semirings by  $k$ -radicals of Green's relations. We also characterize the semirings which are distributive lattices of left  $k$ -simple subsemirings by  $k$ -radicals of Green's relations.

**Keywords:**  $k$ -radicals of Green's relations, left  $k$ -regular semiring, left  $k$ -simple semiring, distributive lattices of left  $k$ -simple semirings.

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