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f-FIXED POINTS OF ISOTONE f-DERIVATIONS ON A LATTICE

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Abstract

In a recent paper, Çeven and Öztürk have generalized the notion of derivation on a lattice to f-derivation, where f is a given function of that lattice into itself. Under some conditions, they have characterized the distributive and modular lattices in terms of their isotone f-derivations. In this paper, we investigate the most important properties of isotone f-derivations on a lattice, paying particular attention to the lattice (resp. ideal) structures of isotone f-derivations and the sets of their f-fixed points. As applications, we provide characterizations of distributive lattices and principal ideals of a lattice in terms of principal f-derivations.

Keywords: lattice, isotone f-derivation, principal f-derivation, f-fixed points set.

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