# ON SOME VARIETIES OF WEAKLY ASSOCIATIVE LATTICE RINGS

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The notion of a weakly associative lattice ring (wal-ring) is a non-transitive generalization of that of a lattice ordered ring (l-ring) in which the identities of associativity of the lattice operations join and meet are replaced by the identities of weak associativity. In the presented paper the notion of wal-ring is introduced, some properties of wal-rings are shown and the basic structure theory of these algebras is developed. In contrast to l-rings, there are many non-trivial finite wal-rings. Wal-ideals are described and straightening, irreducible and semimaximal ideals are introduced and studied. Totally semiordered rings are non-transitive counterpart of totally ordered rings (o-rings). As is known, the class of l-rings which are subdirect products of o-rings (i.e. the class of f-rings) plays an important role in the theory of l-rings. In the presented paper, the classes of wal-rings representable as subdirect products of to-rings an ao-rings (both being non-transitive generalizations of the class of f-rings) are characterized. It have been proved that the both classes are varieties of wal-rings. Further, the class of wal-rings having lattice ordered positive cones is described.