

NONCOMMUTATIVE LATTICES AND NONMONOTONIC LOGICAL RELATIONS

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In this article noncommutative lattices (more precisely – noncommutative upper semi-lattices) are introduced as generalization of classical lattices. Operations on noncommutative lattices well formalize not only knowledge acquisition, but also replacement of knowledge in problems, concerning artificial intelligence. The basic result here is the theorem of associativity of a noncommutative join operation. Further logical binary relations, which operate on these lattices, are introduced and studied. These relations can be used for modeling a nonmonotonic inference. The theorem of existence of a logical closure of relations on noncommutative lattices is proved. A number of the auxiliary results concerning the general theory of lattices and relations are also received.