

Abstract

The paper discusses the existence and number of asymmetric trees with any infinite cardinality (a tree is called asymmetric if it has only a trivial automorphism). Various examples of constructions of asymmetric trees are provided [16] [19]. L. Babai's construction is examined in detail. It is proven that there exists a maximum number of pairwise non-isomorphic asymmetric trees with the cardinality of infinity that have vertices of only two prescribed degrees. The effective application of asymmetric trees in solving Ulam's problem and König's problem is demonstrated, as well as their role in formulating equivalent sentences of the continuum and generalized continuum hypotheses.