Combinatorial properties of entire semigroups of nonnegative matrices

Al'Pin Y., Al'Pina V.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2015, Springer Science+Business Media New York. Generalizations of the Protasov–Voynov theorem on the structure of irreducible semigroups of nonnegative matrices free of zero rows and columns are obtained. The theorem is extended to semigroups that are allowed to be reducible and to matrices that may have zero columns. The main results concern the semigroups called entire. In the definitions and proofs, only combinatorial properties of nonnegative matrices are exploited. Bibliography: 7 titles.