NICULESCU, Rodica Florentina; NICULESCU, Radu Ştefan, A CHARACTERIZATION OF DIRECTED P-GRAPHS

Abstract: In this paper we introduce directed P-graphs and P_k-graphs, as extensions of their previously studied undirected counterparts. The main result of this research computes the minimum number of edges of directed P-graphs and describes the structure of such minimal graphs. We establish a connection between this minimal structure and integer partitions, which allows us to exactly compute the number of distinct, non-isomorphic minimal directed P-graphs. We also characterize the density of the more general directed P_k-graphs relative to the entire set of graphs.

Keywords: graph structure, minimal problems, density estimation