T -Coloring on Certain Graphs

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Abstract

Given a graph $G = (V, E)$ and a set T of non-negative integers containing 0, a T -coloring of G is an integer function f of the vertices of G such that $|f(u) - f(v)| \notin T$ whenever $uv \in E$. The edge-span of a T-coloring is the maximum value of $|f(u) - f(v)|$ over all edges uv, and the T- edge-span of a graph G is the minimum value of the edge-span among all possible T -colorings of G. This paper discusses the T -edge span of the folded hypercube network of dimension n for the k-multiple-of-s set, $T = \{0, s, 2s, \dots ks\} \cup S$, where s and $k \geq 1$ and $S \subseteq \{s + 1, s + 2, \dots ks - 1\}$.