# ANTIPODAL EDGE-COLORINGS OF HYPERCUBES 

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#### Abstract

Two vertices of the $k$-dimensional hypercube $Q_{k}$ are antipodal if they differ in every coordinate. Edges $u v$ and $x y$ are antipodal if $u$ is antipodal to $x$ and $v$ is antipodal to $y$. An antipodal edge-coloring of $Q_{k}$ is a 2-edge-coloring such that antipodal edges always have different colors. Norine conjectured that for $k \geq 2$, in every antipodal edge-coloring of $Q_{k}$ some two antipodal vertices are connected by a monochromatic path. Feder and Subi proved this for $k \leq 5$. We prove it for $k \leq 6$.


Keywords: antipodal edge-coloring, hypercube, monochromatic geodesic.
2010 Mathematics Subject Classification: 05C55, 05C38.

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Received 23 January 2017
Revised 31 July 2017
Accepted 31 July 2017


[^0]:    ${ }^{1}$ Research supported in part by Recruitment Program of Foreign Experts, 1000 Talent Plan, State Administration of Foreign Experts Affairs, China.
    ${ }^{2}$ Research supported in part by NSF grant DMS 08-38434, "EMSW21-MCTP: Research Experience for Graduate Students".

