The Study of Edge Fault-Tolerance for Two Spanning Disjoint Paths of Star Networks

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ABSTRACT

The star graph is a famous interconnection networks. In this paper, we discuss the edge fault tolerance for 2-pair spanning property for star graph. Let Sn = (V1 ?y V2, E) be the n-dimensional star graph. We will show that there exist two spanning disjoint paths P(x1, y1) and P(x2, y2) of Sn ? Fe for any x1, x2 ? V1, y1, y2 ? V2 and Fe ?} E with |Fe| ?T n ? 4, n ?d 5. We also show that there exist two spanning disjoint paths P(x1, y1) and P(x2, y2) of Sn ? Fe for any x1, y1 ? V1, x2, y2 ? V2 and Fe ?} E with |Fe| ?n?T n ? 4, n ?n?d 5. The number of faulty edges is optimal. Additionally, we also discuss the base case of geodesic Hamiltonian laceable in star and hypercube.

Keywords : star graph ; fault tolerance ; spanning disjoint path

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