

Structure connectivity and substructure connectivity of the crossed cube

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Interconnection network is usually represented by a simple graph G . The structure connectivity $\kappa(G; H)$ and substructure connectivity $\kappa^s(G; H)$ are the new proposed indicators to measure network fault tolerance and reliability when the network fails with different structures. As a variant of the popular network hypercube, the crossed cube is also a famous interconnection network in parallel and distributed systems. In this paper, we establish the H -structure connectivity of the n -dimensional crossed cube when $H \in \{K_{1,1}, K_{1,3}, P_k, C_4\}$ and $3 \leq k \leq n$ and H -substructure connectivity of the n -dimensional crossed cube when $H \in \{K_{1,1}, K_{1,3}, P_k, C_m\}$, $3 \leq k \leq n$ and $4 \leq m \leq n$.