In this thesis, we introduce the concepts of bifanability and fault tolerant bifanability. We show that the n-dimensional hypercube $Q_n$ and bipartite hypercube-like $X_n$ are $f$ edges fault tolerant $k^*$-bifanable for $n \geq 3, 0 \leq f \leq n-2, 1 \leq k \leq n-f$. We also prove that the $n$-dimensional hypercube $Q_n$ is $f$ edges fault tolerant $k^*$-bifanable with one faulty node for $n \geq 3, 0 \leq f \leq n-3, k = n-f-1$.

Keywords: super bifanability, fault tolerant bifanability, hypercube, bipartite hypercube-like

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