Cell construction scheme for various cubic fault tolerant Hamiltonian graphs

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A graph $G = (V, E)$ is Hamiltonian if there exists a spanning cycle in G. A Hamiltonian graph $G = (V, E)$ is 1-vertex fault tolerant Hamiltonian if $G - F$ remains Hamiltonian for any fault F that is a vertex in V. A Hamiltonian graph $G = (V, E)$ is 1-edge fault tolerant Hamiltonian if $G - F$ remains Hamiltonian for any fault F that is an edge in E. A graph is 1-fault tolerant Hamiltonian if it is 1-vertex fault tolerant Hamiltonian and 1-edge fault tolerant Hamiltonian. A graph is Hamiltonian connected if there exists a Hamiltonian path between any two different vertex in G. A bipartite Hamiltonian graph $G = (B \cup W, E)$ is 1p-fault tolerant Hamiltonian if $G - F$ remains Hamiltonian for any fault F that is consisted of a vertex in B and a vertex in W. A bipartite graph $G = (B \cup W, E)$ is Hamiltonian laceable if there exists a Hamiltonian path between any vertex ib B and any vertex in W. A bipartite graph is 1-edge fault tolerant Hamiltonian laceable if $G - F$ remains Hamiltonian laceable for any fault F that is an edge in E.

In this talk, we introduce some construction schemes for cubic graph with various Hamiltonian properties.

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