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(54) **SYSTEM AND METHOD FOR GENERATION OF ERROR-CORRECTING CODES IN COMMUNICATION SYSTEMS**

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(57) **ABSTRACT**

The present invention provide a system and method for generating a catalogue of graphs that acts as a source for error correcting codes. A D3 chord index notation is used to describe the graphs. A list of (3, g) Hamiltonian graphs for even girth g is created to satisfy the condition 6 g 16. Each of the lists is infinite and is used for creating LDPC codes of high quality. Furthermore, the embodiments herein generalizes the application scenario for usage of LDPC codes. The embodiments herein utilizes dynamically changing error-correction codes in wireless communication systems.

Trivalent graph

Hamiltonian bipartite / Non-Hamiltonian bipartite / Vertex-transitive / Symmetric / Hamiltonian non-bipartite / Non-Hamiltonian non-bipartite