

Two Applicable Network Families: Fibonacci Cubes and Sierpinski Graphs

Fibonacci cubes and Sierpinski graphs form families of networks/graphs with appealing structural properties and numerous applications. Fibonacci cubes were first introduced as a model for interconnection networks because they can emulate many hypercube algorithms as well as they can emulate other topologies, as for instance meshes. Later it turned out that Fibonacci cubes are applicable in theoretical chemistry and that they lead to the Fibonacci dimension of a graph.

The introduction of Sierpinski graphs was motivated by investigations of certain universal topological spaces and the fact that for base 3 they are isomorphic to the Tower of Hanoi graphs. The labelling of Sierpinski graphs enabled numerous applications, let us just mention Romik's finite automaton for the ToH P2-problem. These graphs were also studied in theoretical computer science under the name iterated complete graphs.