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Topological features of a fractal model for complex networks LIN BO, HERNAN MAKSE, Levich Institute and Physics Department, the City College of New York — We study the construction and topological features of fractal and non-fractal hierarchical tree-like models generated through an inverse-renormalization growth mechanism with various parameters. These complex networks are characterized by scale-free distribution of connections, clustering coefficient, modular structure, degree correlation and a set of fractal dimensions. We compare the results with analytic expressions and show the dependence of topological properties on growing parameters. Networks with different tendency of hub-hub repulsion are produced and classified in terms of degree correlations. Interloops and intraloops are introduced into growing process to test robustness and stability of networks under attack.

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