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Sarah E. Wright* (sarah.e.wright@dartmouth.edu). *Aperiodicity in Topological k -Graphs*. Preliminary report.

I will define and discuss topological k -graphs, a generalization of both Katsura's well known topological graphs as well as the discrete k -graphs defined by Kumjian and Pask. As in discrete k -graphs, the notion of aperiodic paths plays an important roll in the study of the C^* -algebras of higher-rank topological graphs. I will give a generalization of the infinite aperiodicity condition of discrete k -graphs, show some equivalent finite conditions that are more manageable, and discuss how these conditions lead to theorems of uniqueness and simplicity. (Received September 21, 2009)