Counting Vertices in Iterated Line Graphs

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Graph theory has many important applications to discrete mathematics and mathematical modeling. One tool that has been used to understand the underlying structure of graphs is the line graph. In 1965, van Rooij and Wilf characterized iterated line graphs by the growth of their vertex count. In 2017, Balch, Milligan, and Lane-Harvard detailed the properties of the iterated line graphs of regular graphs, bi-regular graphs, and stars. This presentation will focus on the development of general new methods of studying the growth and behavior of iterated line graphs, in particular trees, and we discuss how these methods may generalize.

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