Circuits of Maximum Degree Vertices in Iterated Line Graphs

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Abstract. Let G be a connected graph on $n \geq 3$ vertices, which is not a path. It is shown that for $k = 4n - 6$ the iterated line graph $L^k(G)$ contains a circuit consisting of maximum degree vertices. On the other hand a connected graph on n vertices is constructed, which requires at least $n - 4$ line graph iterations until a circuit consisting of maximum degree vertices appears.

Keywords: iterated line graph, maximum degree.

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