Chordless Cycles in Line Graphs
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Chordless cycles – meaning induced cycles of length at least four – of a line graph $L(G)$ can be viewed as the natural correspondents of cycles of length at least four in the graph $G$. This simple observation leads to new characterizations of the line graphs of 2-connected graphs, of chordal graphs, of chordal bipartite graphs, of strongly chordal graphs, and of several other popular classes of graphs.