Cycle Extendibility in Chordal Graphs

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An old conjecture of Hendry is that cycles in Hamiltonian chordal graphs can be extended: Given a cycle, there is some vertex off the cycle that can be added to the cycle vertices such that there is some cycle on these vertices. This has been shown for certain subclasses (planar chordal graphs and interval graphs) of chordal graphs. We will show that it is enough to establish the conjecture on chordal graphs with a subtree intersection representation using subtrees that are unions of two paths. This model also gives a short proof that it is enough to establish the conjecture when only two vertices are missed by the cycle.

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