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Summary: The authors have addressed in the past different railway engineering problems, mainly using computer algebra systems. They recently showed how it was possible to obtain compatible routes overtaking stations on double track lines (with any number of tracks and any topology) dealing with cycles. As a side achievement it was found that there were alternative track layouts for this type of railway station. Here a complete and comprehensive new package denoted Estaciones, also implemented in Maple, that does not use cycles, is introduced. It offers different procedures related to reachability, trails, number of shortest paths, etc. As main achievement, an improved track layout diagram for overtaking stations (with advantages with respect to the one in the previous paper) is found. Note that track layout diagrams are a hot topic: for example, Adif (Spanish infrastructure administrator) is nowadays remodelling the track layouts of the main railway stations of Madrid, Seville and Barcelona.

MSC:
68Wxx Algorithms in computer science
26Axx Functions of one variable
26-XX Real functions

Keywords:
railway interlocking systems; routes; railway station track layout; graphs; computer algebra systems

Software:
Estaciones; Maple; GraphTheory

Full Text: DOI

References:

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