Noko-Leipzig at the 2019 Confluence Competition

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Noko-Leipzig is a confluence checker for string rewriting.

Noko-Leipzig implements a new method for proving non-joinability using arctically weighted automata [4], a generalisation of other methods using automata [1, 3]. In parallel, it checks local confluence and termination.

We found that even the basic method (no automata) is enough to answer 34 YES and 1401 NO for the 1541 string rewriting systems (SRS) from TPDB [2]. To get more interesting examples, we generated and filtered some random SRS, and submitted them for the Confluence Problems database. Among these are a few that can only be handled by the new method of weighted automata.

Noko-Leipzig uses the same code base as the Matchbox termination prover [5]. With competitor CSI [6], Noko-Leipzig shares the property that it rhymes with a TV series.

References

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