

# CoCo 2021 Participant: FORT-h 1.1\*

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The first-order theory of rewriting is a decidable theory for finite left-linear right-ground rewrite systems. The decision procedure goes back to Dauchet and Tison [1]. FORT-h 1.1 implements a new variant, described in [2], of the decision procedure for the larger class of linear variable-separated rewrite systems. This variant supports a more expressive theory and is based on anchored ground tree transducers. More importantly, it can produce certificates for the YES/NO answers. These certificates can then be verified by FORTify, an independent Haskell program that is code-generated from the formalization of the decision procedure in the proof assistant Isabelle/HOL.

A command-line version of FORT-h 1.1 can be downloaded from

[http://fortissimo.uibk.ac.at/fort\(ify\)/](http://fortissimo.uibk.ac.at/fort(ify)/)

Compared to last year's version, FORT-h 1.1 contains a number of performance improvements. The main ones are smaller intermediate automata constructions due to an earlier elimination of epsilon transitions, and using smaller signature extensions when checking properties on non-ground terms [5].

FORT-h participates in the following CoCo 2021 categories: COM, GCR, NFP, UNC, and UNR. Together with FORTify [6], it participates in the categories COM, TRS, GCR, UNC, and UNR to produce certified YES/NO answers.

## References

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