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*Design and use of the Pecan system*

Pecan is an automated theorem prover for reasoning about properties of automatic sequences, most notably including Sturmian words. It is capable of efficiently proving non-trivial mathematical theorems about all Sturmian words using a decision procedure based on Büchi automata. We give an overview of the Pecan system and show how to use it to prove some interesting theorems about Sturmian words.