

Automaton and Thue-Morse set

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In this talk, we present an introduction to automata and formal languages : notions of alphabet, word (finite and infinite), language. Then, we introduce concepts of deterministic finite automaton and regular language, with many examples, before taking on a very important notion : minimal automata. Basing on examples, we present a criterion of minimality and an algorithm to make an automaton minimal. We also explain how to realize a product of automata.

Over a second phase, we briefly present, if time permits, some results we obtained recently. After defining the Thue-Morse set \mathcal{T} , we give, for every language

$$\{\text{rep}_{2^p}(mt) \mid t \in \mathcal{T}\}$$

where $p, m \in \mathbb{N}_0$, the number of states of the minimal automaton recognising this language.