

Automata and (generalized) power series: beyond Christol

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Christol's theorem, as discussed in the lecture of Bridy, makes a fundamental link between automaticity of sequences and algebraicity of power series over a finite field. We discuss a simultaneous generalization of this statement in two directions: a relaxation of the restriction to finite fields, and an extension to generalized power series in the sense of Hahn and Mal'cev-Neumann. As a sample application, we recover Derksen's positive-characteristic version of the Skolem-Mahler-Lech theorem.

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