Maximum order complexity of automatic and morphic sequences

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In this presentation, I will give an overview of the known results on the "maximum order complexity" of a sequence on a finite alphabet. The aim is to quantify the smallest polynomial recurrence relation that generates the first terms of a sequence. We will discuss the techniques and give estimates for the polynomial subsequences of certain emblematic automatic sequences, such as the Thue-Morse sequence, the Rudin-Shapiro sequence, etc. We also show some results for their morphic analogues, based on Zeckendorf expansions. Joint work with D. Jamet and P. Popoli.