

On the algorithmic complexity of some numeration-related problems

By DÁVID BÓKA (Budapest), PÉTER BURCSI (Budapest)
and M. JÁNOS URAY (Budapest)

Abstract. In this paper, we give explicit upper bounds on the algorithmic complexity of some problems related to matrix-based numeration systems. We consider different types of deterministic algorithms, and compare their worst-case time and space complexity. We also analyze probabilistic algorithms, and examine the question whether they can serve as a reliable alternative.

DÁVID BÓKA &
PÉTER BURCSI &
M. JÁNOS URAY
DEPARTMENT OF COMPUTER ALGEBRA
FACULTY OF INFORMATICS
ELTE – EÖTVÖS LORÁND UNIVERSITY
PÁZMÁNY PÉTER SÉTÁNY 1/C
H-1117 BUDAPEST
HUNGARY

Mathematics Subject Classification: 11A63, 11C99.

Key words and phrases: numeration system, generalized number system, expansive polynomials, algorithmic complexity.