



Coloquio Inst-Mat

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Reflective numeration systems.

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Abstract

In 1953, Franck Gray filled a patent to present an alternative binary numeration system for integers, in which the codage of any two consecutive integers differ by exactly one digit. Several generalizations of Gray's initial construction were proposed since, in particular for words on any finite alphabet (instead of only binary words), and/or words satisfying some combinatorial constraints such as Fibonacci's (binary words not containing 100 as a factor). Most of these constructions rely on global constructions, i.e. on operation on lists. In the talk, we will present a new point of view, local, in which the codage of an integer is obtained by a lazy algorithm applied to a certain type of numeration system defined by reflections. This allows to reinterpret Gray's initial construction as well as subsequent generalizations, but also provide a quite general framework to obtain new ones.

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