

Algebraic-Geometric constructions of convolutional codes

JOSÉ M. MUÑOZ PORRAS

Dpto. Matemáticas, Univ. de Salamanca

jmp@usal.es

Resumen

The techniques proposed by V.D. Goppa for constructing Algebraic-Geometric codes (AG codes) over a finite field \mathbf{F}_q can be translated to the setting of convolutional codes over the field $\mathbf{F}_q(\mathbf{z})$ of rational functions in a variable z . This discovery provides a systematic method for obtaining convolutional codes with prescribed properties, in particular, that attains the maximum free distance possible.

In this talk we explain the basic constructions of these AG convolutional codes, and propose a way to give a geometric interpretation of the parameters of convolutional codes.