

An overview of algebraic geometry codes from surfaces

Jade Nardi

CNRS, IRMAR, UNIVERSITY OF RENNES

Abstract

In the field of coding theory, Goppa's construction of error-correcting codes on algebraic curves has been widely studied and applied. As noticed by M. Tfasman and S. Vlăduț, this construction can be generalized to any algebraic variety.

This talk aims to shed light on the case of surfaces and expand the understanding of Goppa's construction beyond curves. After discussing the motivations for considering codes from higher-dimensional varieties, we will compare and contrast codes from curves and codes from surfaces, notably regarding the computation of their parameters, their *local* properties, and asymptotic constructions.