

ON THE NUMBER OF POINTS OF JACOBIANS OVER FINITE FIELDS: FROM ASYMPTOTIC
THEORY TO APPLICATIONS

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Asymptotic theory of global fields was developed by Tsfasman and Vladuts in 1990's in connection with the problem of bounding the number of points on varieties over finite fields and its applications to the coding theory. In my talk I will explain how explicit versions of Tsfasman and Vladuts results (namely, that of the generalized Brauer-Siegel theorem) can be used for getting very tight bounds for the number of points on jacobians of curves over finite fields. If time permits, I will discuss some progress in finer asymptotic questions related to the asymptotically bad situation in the case of cyclotomic fields and modular curves. This is a joint work with Philippe Lebacque.

Joint work with Philippe Lebacque (Université de Franche-Comté, France).