On the K-theory of curves over number fields

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Borel defined regulators for the odd degree higher K-groups of a number field k and proved a relation between these and the values of the zeta-function of k at 2, 3, 4, ..., generalising the classical relation between its residue at s=1 and the regulator of the unit group of the ring of integers. Similar results were proved and/or conjectured by Bloch and Beilinson for the K-groups of varieties over number fields.

After a review of the background, we discuss some recent joint work with François Brunault, Liu Hang, and Fernando Rodriguez Villegas on K_2 of elliptic curves over certain cubic or quartic number fields, and, time permitting, how one can try to describe the K_4 of curves over number fields.