

An analogue of the Hodge-D-conjecture for products of elliptic curves

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Abstract

In this talk we show that the map

$$\partial : CH^2(E_1 \times E_2, 1) \times Q \longrightarrow PCH^1(Y)$$

surjective, where E_1 and E_2 are two non-isogenous semistable elliptic curves over a local field, $CH^2(E_1 \times E_2, 1)$ is one of Bloch's higher Chow groups and $PCH^1(Y)$ is a certain subquotient of a Chow group of the special fibre of a semi-stable model of $E_1 \times E_2$. On one hand, this can be viewed as a non-Archimedean analogue of the Hodge- D -conjecture of Beilinson - which is known to be true in this case by the work of Chen and Lewis, and on the other, an analogue of the works of Speiss, Mildenhall and Flach in the case when the elliptic curves have split multiplicative reduction.