

[Wiles, A.](#)

**On a conjecture of Brumer.** (English) [Zbl 0719.11082](#)  
[Ann. Math. \(2\) 131, No. 3, 555-565 \(1990\).](#)

In a series of papers, Iwasawa proposed and studied analogues for algebraic number fields  $F$  of constructions due to Weil for curves over finite fields. In particular he conjectured an analogue of Weil's theorem relating the zeta function of a nonsingular curve over a finite field with the characteristic polynomial of its Frobenius automorphism.

Iwasawa's conjecture was proved for  $F =$  the rationals by *B. Mazur* and the author in 1984 [*Invent. Math.* 76, 179–330 (1984; [Zbl 0545.12005](#))]. In 1990 [*ibid.* 131, No. 3, 493–540 (1990; [Zbl 0719.11071](#))] the author proved Iwasawa's conjecture for an arbitrary totally real field and in this paper he uses this to recover a version of Brumer's conjecture connected with a classical theorem of Stickelberger. The key part of this paper is the development of a technique introduced in the author's 1990 paper of adjoining an auxiliary variable to the  $p$ -adic  $L$ -functions.

Reviewer: [A. R. Rajwade \(Chandigarh\)](#)

**MSC:**

[11S40](#) Zeta functions and  $L$ -functions  
[11G20](#) Curves over finite and local fields  
[11R23](#) Iwasawa theory

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