

Kozuka, Kazuhito

The relative Lubin-Tate formal groups and p -adic interpolating functions. (English)

Zbl 0909.11053

Kyushu J. Math. 51, No. 2, 381-391 (1997).

The author extends the results of Shiratani and Imada, who defined the number $B_n(F, h)$ and constructed a p -adic interpolating function to explain many p -adic interpolating functions in a unified manner [K. Shiratani and T. Imada, Mem. Fac. Sci., Kyushu Univ., Ser. A 46, 351-365 (1992; Zbl 0777.11050)]. He now considers the relative formal group F over the ring of integers of a finite unramified extension of \mathbb{Q}_p (the p -adic field) instead of the formal group over p -adic integers. For any primitive Dirichlet character ξ with conductor a power of p , he defines the numbers $B_{n,\xi}(F, h)$ as analogues of generalized Bernoulli numbers and constructs a p -adic interpolating function $L_p(s, \xi, F, h)$ extending Shiratani's $\zeta_p(s, F, h)$, and finally calculates the value of it and deduces a generalization of Leopoldt's formula on the value at $s = 1$ of the p -adic L -function.

Reviewer: Zhang Xianke (Beijing)

MSC:

11S31 Class field theory; p -adic formal groups

14L05 Formal groups, p -divisible groups

11S40 Zeta functions and L -functions

Cited in 1 Review

Keywords:

p -adic field; relative Lubin-Tate formal groups; p -adic interpolating function; generalized Bernoulli numbers; Leopoldt's formula; p -adic L -function

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