ANNALES DE L'INSTITUT FOURIER

ELDER GOVE GRIFFITH

Galois module structure of ideals in wildly ramified cyclic extensions of degree p^2

Annales de l'institut Fourier, tome 48, n° 2 (1998), p. 609-610

<http://www.numdam.org/item?id=AIF_1998__48_2_609_0>

© Annales de l'institut Fourier, 1998, tous droits réservés.

L'accès aux archives de la revue « Annales de l'institut Fourier » (http://annalif.ujf-grenoble.fr/) implique l'accord avec les conditions générales d'utilisation (http://www.numdam.org/conditions). Toute utilisation commerciale ou impression systématique est constitutive d'une infraction pénale. Toute copie ou impression de ce fichier doit contenir la présente mention de copyright.

NUMDAM

Article numérisé dans le cadre du programme
Numérisation de documents anciens mathématiques
http://www.numdam.org/

Ann. Inst. Fourier, Grenoble
48, 2 (1998), 609-610

CORRIGENDUM

GALOIS MODULE STRUCTURE OF IDEALS IN WILDLY RAMIFIED CYCLIC EXTENSIONS OF DEGREE p^2

by Gove Griffith ELDER

(Article paru dans le tome 45 (1995), fascicule 3, pp. 625–647)

The author would like to thank Nigel Byott for pointing out the errors in Theorem 1. Base upon the following lemmas the exponents d_r, b and h_i should read:

• Based upon Lemma 8, $d_r = \lceil (n + (r+1)pb_1)/p^2 \rceil - \max\{\lceil n/p^2 \rceil, \lambda_{2,0} - e_0\}$.

• Based upon Lemma 7, $b = \sum_{j=0, s_j > p-1}^{r-1} (\lceil (n - (p-j-1)pb_1)/p^2 \rceil - \lceil (n-(p-j)pb_1)/p^2 \rceil) + \sum_{j=0, p-1 \geq s_j > p-2}^{r-1} (\min\{\lceil (\lambda_{2,1}(n) - (s_j - j)b_1)/p \rceil - e_0, \lceil (n-(p-j-1)pb_1)/p^2 \rceil\} - \lceil (n-(p-j)pb_1)/p^2 \rceil) + \sum_{j=r, s_j \geq p-1}^{r} \max\{0, \lambda_{2,0}(n) - e_0 - \lceil (n + rpb_1)/p^2 \rceil\}$.

• Based upon Lemma 7, $h_i = \sum_{j=0, s_j - 1 = i}^{r-1} \max\{0, \lceil (n - (p-j-1)pb_1)/p^2 \rceil - \lceil (\lambda_{2,1}(n) - (s_j - j)b_1)/p \rceil + e_0\} + \sum_{j=0, s_j = i}^{r-1} (\min\{\lceil (\lambda_{2,1}(n) - (s_j - j)b_1)/p \rceil - e_0, \lceil (n - (p-j-1)pb_1)/p^2 \rceil\} - \lceil (n - (p-j)pb_1)/p^2 \rceil) + \sum_{j=r, s_j = i}^{r} \max\{0, \lambda_{2,0}(n) - e_0 - \lceil (n + rpb_1)/p^2 \rceil\}$.

A cursory glance at the statement of Theorem 1 might suggest the appearance of many different types of $(R_2, R_1; \lambda^i)$ in a given ideal. This is

misleading. Usually only one or two h_i is nonzero. In fact, generally the only nonzero h_i are h_r and h_{r+1}.

Finally, we note one may use Nakayama's lemma instead of our methods, see 640-644, to prove Step 3, for example [G.G. Elder and M.J. Madan, Galois module structure of integers in wildly ramified $C_p \times C_p$-extensions, Can. J. Math., 49, n°4 (1997), 722-735].

January 1, 1998.

Gove Griffith ELDER,
University of Nebraska at Omaha
College of Arts and Sciences
Department of Mathematics
Omaha, NE 68182-0243 (USA).
elder@unomaha.edu