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Corrections to "Some Differentials in the mod p Adams Spectral Sequence ($p \geqq 5$)"

Osamu NAKAMURA and Shichirô OKA

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In Theorem 2.4 of our paper [1], we used the relation $d_3(g_{2,0}x)=0$. However, there holds a differential

$$(*) \qquad d_3(g_{2,0}x) = \alpha b_{01}h_0b_{11}a_2 \quad \text{for some} \quad \alpha \in Z_p,$$

and it seems that the coefficient α cannot be determined by matric Massey products in $H^{**}(A)$ and the known relations in $\pi_*(S; p)$. Also in Theorem 4.1 and Proposition 4.2 (iii), we asserted that

"$\pi_{(2p^2+2p+1)q-5}(S; p)$ is Z_p with the generator $\beta_1\rho'_1$ and $\beta_1^{p-1}\kappa_1=0$ in this stem",

and it is easy to see that $\beta_1^{p-1}\kappa_1=0$ is equivalent to $\alpha=0$.

On the other hand, S. Sakurai and A. Tsuchiya (unpublished) have recently obtained the relation $\beta_1^{p-1}\kappa_1 \neq 0$ by computing $\mathrm{Ext}^{**}_{BP^*BP}(BP^*, BP^*)$, the E_2-term of the Adams-Novikov spectral sequence. This means $\alpha \neq 0$.

By this result of S. Sakurai and A. Tsuchiya, we must correct the above assertion as follows:

"$\pi_{(2p^2+2p+1)q-5}(S; p)$ is Z_p and generated by $\beta_1^{p-1}\kappa_1$".

Furthermore, we see easily from (*) with $\alpha \neq 0$ that we must correct Theorems 2.4, 3.2, 4.1 and Proposition 4.2 in [1] as follows:

1-1. In Theorem 2.4, I. (vii) should be replaced by

$$\text{"(vii)} \quad d_3(b_{01}^k g_{2,0}x) = b_{01}^{k+1}h_0b_{11}a_2, \qquad k \geqq 0".$$

1-2. In Theorem 2.4, I. (viii) should be deleted.

1-3. In Theorem 2.4, the case $l=0$ should be added to II. (iii), i.e., "$1 \leqq l \leqq p-4$" in II. (iii) should be replaced by "$0 \leqq l \leqq p-4$".

2-1. In Theorem 3.1 (8), the element $h_0b_{01}^{p-1}k_{1,0}b_{02}$ should be added, i.e., "$1 \leqq l \leqq p-4$" in (8) should be replaced by "$0 \leqq l \leqq p-4$".

2-2. In Theorem 3.1 (14), the element $b_{01}h_0b_{11}a_2$ should be deleted.

3. In Theorem 4.1, the element $\beta_1\rho'_1(=\alpha_1\rho'')$ should be replaced by the element $\beta_1^{p-1}\kappa_1$.

4-1. In Proposition 4.2 (ii), the element ρ'_1 should be deleted.

4-2. In Proposition 4.2, (iii) should be deleted.

4–3. In Proposition 4.2 (iv), the element κ_1 should be added, i.e., "$\kappa_r(2 \leqq r \leqq p-3)$" in (iv) should be replaced by "$\kappa_r(1 \leqq r \leqq p-3)$".

The authors would like to thank Professor A. Tsuchiya who pointed out the relation $\beta_1^{p-1}\kappa_1 \neq 0$.

Reference

[1] O. Nakamura and S. Oka, *Some differentials in the* mod *p Adams spectral sequence* ($p \geqq 5$), Hiroshima Math. J. **6** (1976), 305–330.

Department of Mathematics,
Science and Engineering Division,
University of the Ryukyus
and
Department of Mathematics,
Faculty of Science,
*Hiroshima University**)

*) The present address of the second author is as follows: Department of Mathematics, Faculty of Science, Kyushu University 33, Fukuoka, Japan.