



CORRECTION

Correction to: Efficient Search for Superspecial Hyperelliptic Curves of Genus Four with Automorphism Group Containing C_6

Momonari Kudo · Tasuku Nakagawa ·
Tsuyoshi Takagi

Published online: 24 November 2023
© Springer Nature Switzerland AG 2023

Correction to: Math.Comput.Sci. 2023 17:21

<https://doi.org/10.1007/s11786-023-00571-w>

Unfortunately, the below corrections are missed in the original Paper and the corrections are now updated.

In Sec 1, 3rd Paragraph, 7th Line, with complexity $\tilde{O}(p^3)$ should be with complexity $O(p^3)$.

In Sec 2, 2nd Paragraph, 2nd Line, “and Q_8 the” should be “and \mathbf{Q}_8 the”.

In 2nd Paragraph under Remark 2.1.3, 9th Line, [24, Table 3] should be [24, Table 6].

In Theorem 2.1.5, 1st Line, $\overline{\text{Aut}}(H)$ should be $\overline{\text{Aut}}(H)$.

In Theorem 2.1.5, 3rd Line, $\overline{\text{Aut}}(H)$ should be $\overline{\text{Aut}}(H)$.

In Sec 2.2, 2nd Paragraph, 1st Line, “general curve” should be “general curve C of genus g over an algebraically closed field k ”.

In Sec 2.2, 2nd Paragraph, 4th Line, “over K ” should be “over k ”.

In Sec 2.2, 2nd Paragraph, 5th Line, “ $K(x)$ ” should be “ $k(x)$ ”.

In Sec 2.2, 2nd Paragraph under Example 2.2.3, Equation (2.2.5), U_k should be U_ℓ .

In Sec 2.2, 2nd Paragraph under Example 2.2.3, Equation $A(\ell)$, add 1 just above $r_1(\ell)$.

In Sec 2.2, 2nd Paragraph under Example 2.2.3, 7th Line under Equation $A(\ell)$, “the value of k ” should be “the value of ℓ ”.

In Sec 2.4, 1st Paragraph under Theorem 2.4.4, 2nd Line, “Table 2 below” should be “Table 2”.

In In Sec 3, 1st Paragraph, 7th Line, “Let ι ” should be “Let t ” and “of of” should be “of”.

The original article can be found online at <https://doi.org/10.1007/s11786-023-00571-w>.

M. Kudo (✉)

Department of Information and Communication Engineering, Faculty of Information Engineering, Fukuoka Institute of Technology, Fukuoka, Japan
e-mail: m-kudo@fit.ac.jp

T. Nakagawa

Department of Mathematical Engineering and Information Physics, School of Engineering, The University of Tokyo, Tokyo, Japan
e-mail: nakagawa-tasuku705@g.ecc.u-tokyo.ac.jp

T. Takagi

Department of Mathematical Informatics, Graduate School of Information Science and Technology, The University of Tokyo, Tokyo, Japan
e-mail: takagi@mist.i.u-tokyo.ac.jp

In Sec 3, 1st Paragraph, 8th Line, “has order-3” should be “has an order-3”.

In In Sec 3, 1st Paragraph, 8th Line, $-\zeta_3^2 y$ should be $\zeta_3^2 y$.

In Sec 3, 1st Paragraph, 9th Line, $\lambda = -\zeta_3^2$ should be $\lambda = \zeta_3^2$.

In Sec 3, 1st Paragraph, 9th Line, σ_3 should be σ_3 and “is an has order-6, automorphism say” should be “has order-6, say”.

In Sec 3.1, 1st Paragraph, 7th Line, “ a and b ” should be “ A and B ”.

In the proof of Lemma 3.1.1, 1st Paragraph 2nd Line, $\zeta : \zeta_3$ should be $\zeta := \zeta_3$.

In the proof of Lemma 3.1.1, 2nd Paragraph, 1st Line, since \mathbb{C}_9 should be since \mathbf{C}_9 .

In the proof of Lemma 3.1.2, 5th Line, remove an extra indent before “where μ ’ is an element ...”.

In Remark 3.2.2, 4th Paragraph, 2nd Line, $\sigma \circ \iota$ should be $\sigma_3^{\circ} \iota$.

In Remark 3.2.2, 2nd Paragraph, 5th Line, $H_{a,b}/\langle \sigma \circ \iota \rangle(x : y : z)$ should be $H_{a,b}/\langle \sigma \circ \iota \rangle; (x : y : z)$.

In Remark 3.2.2, 3rd Paragraph, 3rd Line, “ $d_4 = 0$ and” should be “ $d_4 = 0$, and” (Oxford comma).

In Remark 3.2.2, 3rd Paragraph, 4th Line, “ $\{w^{(3)}\}$ and” should be “ $\{w^{(3)}\}$, and” (Oxford comma), and “ D_3 and” should be “ D_3 , and” (Oxford comma).

In Remark 3.2.2, 4th Paragraph, 2nd Line, “(4, 3) and” should be “(4, 3), and” (Oxford comma).

In Remark 3.2.2, 5th Paragraph, 2nd Line, “(3, 1) and” should be “(3, 1), and” (Oxford comma), and “(1, 4)-th ones” should be “(4, 1)-th ones”.

In Theorem 4.1.1, 2nd Line, \mathbb{F}_{p^2} should be \mathbb{F}_{p^2} .

In the proof of Theorem 4.1.1, 1st Paragraph, 10th Line, degree $\leq D$ should be degree $\leq D$.

In the proof of Theorem 4.1.1, 1st Paragraph, 11th Line, $\tilde{O}, (D^2)$ should be $\tilde{O}(D^2)$.

In In the proof of Lemma 4.1.2, 1st Paragraph, 3rd Line, $\frac{(2i-1)p+(2j-1)}{2}$ should be $\frac{(2i-1)p-(2j-1)}{2}$.

In the proof of Lemma 4.1.2, 1st Paragraph, 5th Line, $(g^n)_{k-3}$ should be $(g^n)_{\ell-3}$.

In the proof of Lemma 4.1.2, 1st Paragraph, 7th Line, $\frac{(2i-1)p+(2j-1)}{2}$ should be $\frac{(2i-1)p-(2j-1)}{2}$.

In the proof of Lemma 4.1.2, 2nd Paragraph, 1st Line, $\frac{(2i-1)p+(2j-1)}{2}$ should be $\frac{(2i-1)p-(2j-1)}{2}$.

In the proof of Lemma 4.1.2, 2nd Paragraph, 4th Line, $\ell \in 3\mathbb{Z}$ should be $\ell \in 3\mathbb{Z}$.

In the proof of Lemma 4.1.2, 2nd Paragraph, 5th Line, “ $9n - \ell = 3p$,” (extra space before period) should be “ $9n - \ell = 3p$,” “ $\ell = 3n - 3$.” (extra space before period) should be “ $\ell = 3n - 3$,” $(g_n)\ell$ should be $(g^n)_\ell$, and $\ell \in 3\mathbb{Z}$ should be $\ell \in 3\mathbb{Z}$.

In the proof of Lemma 4.1.2, 2nd Paragraph, 6th Line, $3p = 6n + 3 < \ell < 9n$ should be $3p = 6n + 3 \leq \ell \leq 9n$.

In Remark 4.1.3, 8th Line, “Compute the roots of” should be “Compute the roots in \mathbb{F}_{p^2} of”.

In Remark 4.1.3, 13th Line, “Compute the roots of” should be “Compute the roots in \mathbb{F}_{p^2} of”.

Pages 17–18: The references in alphabetical order with respect to the last names of the first authors. Some extra commas should be removed.

In Reference “Algorithmic study of superspecial hyperelliptic curves over finite fields”, volumes, pages, and year (Vol. 70, 49–64, 2022) should be added.

Throughout the paper, l changes to ℓ .

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article’s Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.