Erratum: Quantum-logic-based $^{25}Mg^{+}$-$^{27}Al^{+}$ optical frequency standard for the redefinition of the SI second [Phys. Rev. Applied 21, 044017 (2024)]

Z.Y. Ma, K. Deng,* Z.Y. Wang, W.Z. Wei, P. Hao, H.X. Zhang, L.R. Pang, B. Wang, F.F. Wu, H.L. Liu, W.H. Yuan, J.L. Chang, J.X. Zhang, Q.Y. Wu, J. Zhang, and Z.H. Lu†

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In this article, we reported an evaluation of the systematic uncertainties of the quantum-logic-based $^{25}Mg^{+}$-$^{27}Al^{+}$ ion optical clock at HUST. It was brought to our attention recently that the Stark shift caused by the electric field of the ion trap should be 0.15% of the excess micromotion (EMM) shift by using the corrected Eq. (1), given by [1]

$$\left(\frac{\Delta\nu}{\nu}\right)_{\text{Stark}} = \left(\frac{\Delta\nu}{\nu}\right)_{\text{EMM}} \left(\frac{\Omega_{\text{RF}}/2\pi}{617\ \text{MHz}}\right)^2 . \tag{1}$$

Here, $\Delta\nu/\nu$ is the fractional frequency shift of the clock transition, $\Omega_{\text{RF}}/2\pi = 24$ MHz is the trap rf drive frequency. This small correction has no influence on the reported systematic uncertainties.

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[1] S. M. Brewer, J.-S. Chen, A. M. Hankin, E. R. Clements, C. W. Chou, D. J. Wineland, D. B. Hume, and D. R. Leibrandt, Erratum: $^{27}Al^{+}$ quantum-logic clock with a systematic uncertainty below 10^{-18}, Phys. Rev. Lett. **131**, 059901(E) (2023).

*Corresponding author: ke.deng@hust.edu.cn
†Corresponding author: zehuanglu@hust.edu.cn

