Erratum: Observation of the $4f^{14}6s^2\ ^1S_0$–$4f^{13}5d6s^2(J=2)$ clock transition at 431 nm in ^{171}Yb [Phys. Rev. A 107, L060801 (2023)]

Akio Kawasaki, Takumi Kobayashi, Akiko Nishiyama, Takehiko Tanabe, and Masami Yasuda

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After the publication of the paper, we discovered erroneous treatments in compensating for systematic shifts to calculate the absolute frequency for the $F=5/2$ hyperfine state. During the continuous irradiation of the 431 nm probe light on atoms for 1 s, the linear chirp of the laser frequency over the step size of the frequency difference between adjacent data points, which is −50 kHz, was activated. This introduces a systematic frequency shift of −25 kHz. In addition, other systematic shifts were subtracted in a wrong way.

With these corrections, Fig. 2(b) of the original paper is modified to Fig. 1. The revised absolute frequency for the $F=5/2$ hyperfine state is 695 173 863 243(30) kHz. The correct value for the hyperfine splitting and the A constant for ^{171}Yb is 2808.385(31) MHz and 1123.354(13) MHz, respectively.

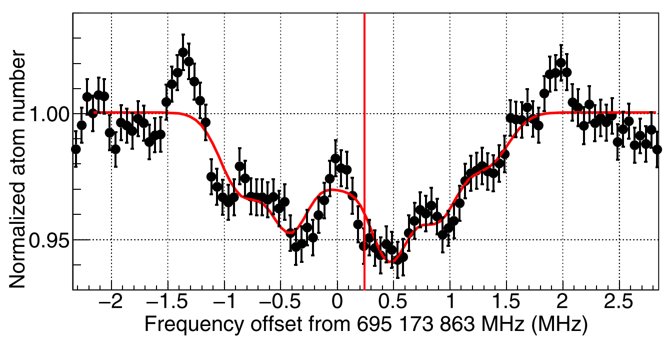

FIG. 1. Spectrum of the depletion of the MOT due to the $4f^{14}6s^2\ ^1S_0$–$4f^{13}5d6s^2$ ($J=2$) transition: the $F=5/2$ hyperfine state. The red line shows the fit of the black points. The fitted average frequency of the six dips, shown in the red vertical line, is 0.243(27) MHz. The uncertainty includes the compensation of multiplying square root of $\chi^2/\mathrm{ndf}=1.658$ (ndf: number of degrees of freedom). The fit is performed with a constant offset and six Gaussians. Gaussians are characterized by their common width, average frequency of six dips, spacing between adjacent dips that is regarded as the Zeeman splitting for $\Delta|m_F|=1$, and six independent amount of dips. Systematic shifts are compensated.

