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Laser Spectroscopy of Trapped Ions

Absolute frequency measurement of the $^2S_{1/2} \rightarrow ^2F_{7/2}$ optical clock transition in $^{171}\text{Yb}^+$ with an uncertainty of 4×10^{-16} using a frequency link to international atomic time

Charles F. A. Baynham, Rachel M. Godun , Jonathan M. Jones, Steven A. King, Peter B. R. Nisbet-Jones, Fred Baynes, ...show all

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Abstract

The highly forbidden $2S_{1/2} \rightarrow 2F_{7/2}$ electric octupole transition in $^{171}\text{Yb}^+$ is a potential candidate for a redefinition of the SI second. We present a measurement of the

absolute frequency of this transition, which is linked to

International Atomic Time (TAI) via a frequency link to $^{171}\text{Yb}^+$ optical

frequency standards. The measured frequency is $5.46 \times 10^{14} \text{ Hz}$ with an absolute

frequency uncertainty of 4×10^{-16} .

of 4×10^{-16} using a frequency link to international atomic time

which was used to determine the frequency of the $^{171}\text{Yb}^+$ optical

frequency standards. The measured frequency is $5.46 \times 10^{14} \text{ Hz}$ with an absolute

frequency uncertainty of 4×10^{-16} .

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Notes

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Additional information

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