

References Reference

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November 24, 2025

1 Introduction

This is a test document. Let's test if this compiles correctly:

This is a potential way of reducing light shift in compact clock systems [1]

This is the first use of vapour cells in atomic clocks / frequency references [2]

A recent review article of 2 photon Rb compact clocks [3]

Sean's thesis - good vapour cell and general reference [4]

French thesis - sean recommends - looks at LCVR and the noise it adds to system [5]

Rachel Cannon's thesis - good explanation of error signals / lock in detection [6]

New paper on short term stability of 87Rb 2 photon clock, nice diagrams [7]

Eilidh's journal club paper - 776nm fluorescence detection [8]

Steck 87Rb [9]

References

- [1] Claudio E. Calosso et al. "Laser-Frequency Stabilization Using Light Shift in Compact Atomic Clocks". In: *Physical Review Applied* 22.3 (Sept. 12, 2024), p. 034033. DOI: [10.1103/PhysRevApplied.22.034033](https://doi.org/10.1103/PhysRevApplied.22.034033).
- [2] J. Kitching, S. Knappe, and L. Hollberg. "Miniature Vapor-Cell Atomic-Frequency References". In: *Applied Physics Letters* 81.3 (July 15, 2002), pp. 553–555. ISSN: 0003-6951. DOI: [10.1063/1.1494115](https://doi.org/10.1063/1.1494115).
- [3] Asagwegbe C. Obaze-Adeleke, Bryan Semon, and Thejesh N. Bandi. "A Comprehensive Review of Rubidium Two-Photon Vapor Cell Optical Clock: Long-Term Performance Limitations and Potential Improvements". In: *Photonics* 12.5 (May 2025), p. 513. ISSN: 2304-6732. DOI: [10.3390/photonics12050513](https://doi.org/10.3390/photonics12050513).
- [4] Sean Dyer. "Development of Micro-Fabricated Vapour Cell Technology for Compact Atomic Devices". University of Strathclyde, 2024. DOI: [10.48730/VBWZ-7J94](https://doi.org/10.48730/VBWZ-7J94).

- [5] Moustafa Abdel Hafiz. “Development and Metrological Characterization of a High-Performance Cs Cell Atomic Clock Based on Coherent Population Trapping”. Theses. Université Bourgogne Franche-Comté, June 2017. URL: <https://theses.hal.science/tel-01809998> (visited on 11/24/2025).
- [6] Rachel Cannon. “Miniaturised, High-Reliability Lasers for Quantum Technologies”. 2024. DOI: [10.48730/hwv6-g295](https://doi.org/10.48730/hwv6-g295).
- [7] Martin Callejo et al. “Short-Term Stability of a Microcell Optical Reference Based on the Rb Atom Two-Photon Transition at 778 nm”. In: *JOSA B* 42.1 (Jan. 1, 2025), pp. 151–159. ISSN: 1520-8540. DOI: [10.1364/JOSAB.533904](https://doi.org/10.1364/JOSAB.533904).
- [8] River Beard et al. “Two-Photon Rubidium Clock Detecting 776 nm Fluorescence”. In: *Optics Express*, Vol. 32, Issue 5, pp. 7417-7425 (Feb. 26, 2024). DOI: [10.1364/OE.513974](https://doi.org/10.1364/OE.513974).
- [9] *Alkali D Line Data*. URL: <https://steck.us/alkalidata/> (visited on 11/24/2025).