References Reference

Abi Kaye

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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 / requency references [2]

A recent review article of 2 photon Rb coompact 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 explaination 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 flourescence detection [8]

Paper by Aidan and Rachel O on how to characterise noise in an ECDL [9]

Aidan suggestion 2 - Doppler thermometry and how to fit spectra nicely [10]

Steck 87Rb [11]

More interest than anything - a new python package atomSmltr for simulation laser cooling and MOTs [12]

References

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[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.

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[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).

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[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.

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[10] Nicola Agnew et al. *Practical Primary Thermometry via Alkali-Metal-Vapour Doppler Broadening*. July 24, 2025. DOI: 10.48550/arXiv.2505.24854. arXiv: 2505.24854 [physics]. Pre-published.

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[12] Mateo Weill, Andrea Bertoldi, and Alexandre Dareau. *atomSmltr: A Modular Python Package to Simulate Laser Cooling Setups*. Nov. 25, 2025. DOI: 10.48550/arXiv.2511.20596. arXiv: 2511.20596 [physics]. Pre-published.