References Reference

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1 General Reads

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]

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]

The original 3 cornered hat maths - first paper but not useful reading [13]

A general review article on metrology - should read all through. The first mention of a three cornered hat and a good description including the maths [14]

Enrico Rubiola's phase noise / frequency noise chart - read! [15] [16]

2 Iodine Clocks

The main paper for optical iodine clocks (Vector Atomic, Roslund et al) [17] and their recent conference proceeding [18]

German group (Wust et al) who have made iodine frequency references for space [19]

A thesis on iodine frequency references that has some nice explanations in it [20]

Original (?) paper on use of unsaturated iodine cell for frequency stability. Short paper, easy to read. Takeaways: coating inside of cell walls with iodine then adding known amount (moles) of gas produces linear temp vs pressure relationship, when operating temperature is 10 degrees or more (good for frequency stability). Could consider higher vapour pressure / moles of gas for better SNR but need to operate at higher temps to get linear region. [21]

More recent paper on unsaturated iodine cells. Uses modulated transfer spectroscopy (MTS), where probe beam in SAS is modulated using an EOM to provide a locking signal. uses a 25cm length glass cell!! and tonnes of optics we wont be able to use. 10^{-15} at 10,000 s though, which is impressive [22]

A better explanation / example of MTS (see above iodine spectroscopy) [23]

3 Pill Characterisation

Thesis sections 4.6 onwards [24]

Other thesis [25]

4 OC2 inspiration

Rach Dawson designed portable robust cell mount system for OPMs for prosthetics - see here [26]

James thesis - good for bonder temperature and degassing behaviour, amongst many other things [27]

SPAD with 2 photon clock - R Beard's paper [8]

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