

Appendix A

Some Rubidium-87 Parameters of Interest

Property	Symbol	Value
Wavelength in Vacuum	λ	780.23 nm
Natural Linewidth	$\Gamma/2\pi$	5.9 MHz
Hyperfine Splitting	ω_{hf}	6834.68261090434(3) MHz
Mass	m	$1.443160(11) \times 10^{-25}$ kg [77]
$ 1, -1\rangle$ S-Wave Scattering Length	a_{11}	5.31×10^{-9} m
DC Polarizability	α_0	5.26×10^{-39} J m ² V ⁻² [78]

Table A.1: Some properties of ⁸⁷Rb relevant to this thesis. For more detail consult [79]