

Atomic Physics. Exploration through problems and solutions. Russian Edition

We would be greatly indebted to our readers for informing us of errors and misprints in the book by sending an e-mail to: budker@berkeley.edu. The Errata are listed at <http://budker.berkeley.edu/>. We will do our best to correct problems in subsequent printings of the book.

Here is a list of issues identified so far **in the Russian Edition** (Moscow, Fizmatlit, 2009).

Comments and Errata

- Problem 3.1

Equation (3.30) is incorrect, which also impacts some of the surrounding discussion. The last paragraph should read:

By solving the coupled differential equations (3.5) and (3.7), one obtains the general analytic formula for the time dependence of the population of the upper state:

$$P(t) = \frac{(2V_0)^2 e^{-\Gamma t/2 - \text{Im}[\sqrt{(2V_0)^2 + (\Delta + i\Gamma/2)^2}]t}}{|(2V_0)^2 + (\Delta + i\Gamma/2)^2|} \left| \frac{1}{2} \left(1 - e^{i[(2V_0)^2 + (\Delta + i\Gamma/2)^2]^{1/2}t} \right) \right|^2. \quad (3.30)$$

- Appendix D.1 Equation (D.2) should read:

$$S_i = P_i/P_0, \quad i = 1, 2, 3.$$

- Appendix B

There are errors in Table B.1 in the columns with the lifetimes and reduced matrix elements. The revised and updated table should read:

Atom	Upper state	Energy, cm^{-1}	Wavelength, nm	Lifetime, ns	$ d_J , ea_0$
H	$2\ ^2P_{1/2}$	82258.91	121.5674	1.60	1.05
	$2\ ^2P_{3/2}$	82259.27	121.5668	1.60	1.49
Li	$2\ ^2P_{1/2}$	14903.66	670.976	27.1	3.33
	$2\ ^2P_{3/2}$	14904.00	670.961	27.1	4.71
Na	$3\ ^2P_{1/2}$	16956.18	589.755	16.3	3.52
	$3\ ^2P_{3/2}$	16973.38	589.158	16.2	4.98
K	$4\ ^2P_{1/2}$	12985.17	770.109	26.2	4.10
	$4\ ^2P_{3/2}$	13042.89	766.701	26.1	5.80
Rb	$5\ ^2P_{1/2}$	12578.96	794.978	27.7	4.23
	$5\ ^2P_{3/2}$	12816.56	780.241	26.2	5.98
Cs	$6\ ^2P_{1/2}$	11178.24	894.595	34.8	4.49
	$6\ ^2P_{3/2}$	11732.35	852.344	30.4	6.32
Fr	$7\ ^2P_{1/2}$	12236.66	817.216	29.5	4.28
	$7\ ^2P_{3/2}$	13923.20	718.226	21.0	5.90