- Page 26, last line: replace "can only support multipole moments of rank 2^κ" with "can only support multipole moments of rank κ"
- Page 44, in Eq. (3.69), replace "$\psi'^{m_1} = \mathscr{D}_{m_1 m}\psi^m$." with "$\psi'^{m_1} = \mathscr{D}_{m_1 m_2}\psi^{m_2}$."
- Page 44, in beginning of Eq. (3.70), replace "$|\psi\rangle = \mathscr{D}^{-1}|\psi\rangle'$" with "$|\psi\rangle = \mathscr{D}^{-1}|\psi'\rangle$"
- Page 49, second paragraph of Sec. 3.7, "tensor with this property is is called"→"tensor with this property is called"
- Page 57, first (partial) paragraph, "requirement that the the average"→"requirement that the average"
- Page 86, footnote, "Bluhm et al. (1996)"→"Blum (1996)"
- Page 94, before, in, and following Eq. (5.49), and in Eq. (5.50), replace Γ with $\widehat{\Gamma}$
- Page 94, following Eq. (5.49), change to "Here $\widehat{\Gamma}$ is a diagonal matrix with the population decay rate of each state on the diagonal."
- Page 94, last sentence before Sec. 5.6, "Bluhm et al. (1996)"→"Blum (1996)"
- Page 102, Eq. (5.78), change J to F:

$$\rho_{FF}(\theta,\phi) = \sqrt{\frac{4\pi}{2F+1}}\sum_{\kappa=0}^{2F}\sum_{q=-\kappa}^{\kappa}\langle FF\kappa 0|FF\rangle\rho^{\kappa q}Y_{\kappa q}(\theta,\phi).$$

- Page 116, first paragraph of Sec. 6.3, "Bluhm et al. 1996"→"Blum 1996"
- Page 201, move "where we have used Eq. (7.62) with $\Gamma = 1/\tau$." from after Eq. (10.58d) to after Eq. (10.59d), and swap the period and comma at the ends of Eqs. (10.58d) and (10.59d)
- Page 221, caption of Fig. 11.2, break "ground-state-atom" at first hyphen.
- Page 223, first line of Fig. 11.3 caption, break "ground-state" at hyphen.
- Page 225, last full paragraph, "is is due to the polarization"→"is due to the polarization"
- Page 228, before Sec. 11.6, replace "Grossetete (1965)" with "Grossetête (1964)".
- Page 236, delete "a" from "a the reference signal" at beginning of partial barred section.
- Page 305, first complete paragraph, "the the initial state"→"the initial state"

- Page 326, insert "(From Acosta et al. 2008.)" at the beginning of Fig. 18.14 caption
- Page 350, in Eqs. (D.38), (D.39) (twice), (D.40), and between Eqs. (D.38) and (D.39), replace "$\tilde{R}$" with "$\tilde{\mathsf{R}}$"
- Page 355, replace period at the end of Eq. (E.16) with comma
- Page 359, 3rd line, "different density matrix then"→"different density matrix than"
- Page 360, replace reference

  > Acosta, V., Ledbetter, M. P., Rochester, S. M., Budker, D., Jackson-Kimball, D. F., Hovde, D. C., Gawlik, W., Pustelny, S. and Zachorowski, J. (2006). *Physical Review A*, **73**, 053404.

  with

  > Acosta, V., Ledbetter, M. P., Rochester, S. M., Budker, D., Jackson Kimball, D. F., Hovde, D. C., Gawlik, W., Pustelny, S., Zachorowski, J. and Yashchuk, V. V. (2006). *Physical Review A*, **73**, 053404.

- Page 361, add new reference between Bluhm, R. and Blushs, K.:

  > Blum, K. (1996). *Density Matrix Theory and Applications*. Physics of Atoms and Molecules, Plenum Press, New York, 2nd ed.

- Page 361, replace reference Balabas, M.V. et al. with

  > Balabas, M. V., Karaulanov, T., Ledbetter, M. P. and Budker, D. (2010). *Physical Review Letters*, **105**, 070801.

- Page 363, replace pair of references

  > Ducloy, M. (1973). *Physical Review A*, **8**, 1844.
  > ——— (1976). *Journal of Physics B*, **9**, 357.

  with

  > Ducloy, M. (1976). *Journal of Physics B*, **9**, 357.
  > Ducloy, M., Gorza, M. P. and Decomps, B. (1973). *Optics Communications*, **8**, 21.

- Page 364, replace reference

  > Grossetete, F. (1965). *Journal de Physique*, **26**, 26.

  with

Grossetête, F. (1964). *Journal de Physique*, **25**, 383.

- Page 367, replace reference

  Yashchuk, V., Budker, D. and Zolotorev, M. (1999). *Trapped Charged Particles and Fundamental Physics*, Asilomar, CA, USA, *AIP Conf. Proc.*, vol. 457, pp. 177–81.

  with

  Yashchuk, V., Budker, D. and Zolotorev, M. (1999). D. Dubin and D. Schneider (eds.), *Trapped Charged Particles and Fundamental Physics*, American Institute of Physics, Asilomar, CA, USA, *AIP Conference Proceedings*, vol. 457, pp. 177–81.