

Errata for “Mathematical Physiology” - Second Edition

Remark: Following is a list of known errors in the 2nd edition of Mathematical Physiology.

- pg. 45, exercise 13 (d), ”showing that $\sigma + \epsilon_1 \lambda_1 \alpha_1 x + \epsilon_2 \lambda_2 \alpha_2 y$ is ...”
- pg.89, line 1, ”where N is the mole fraction of solute.”
- pg. 177, Figure 2, the arrow beside $I_t dx$ is pointed in the wrong direction.
- pg. 189, eqns 4.64, 4.66 have strange extra symbols [6bp] at the beginning
- pg. 191, line 5, ”Fourier”, not ”Fouirier”
- pg. 334, line 11, w , not ω
- pg. 626, exercise 24 reference should be (12.189-12.190)
- pg. 689, line -10, Exercise 13.13a
- pg. 827, lines 1 and 2 should read ”has the effect of increasing the resistance of the afferent arteriole, and decreasing the resistance of the efferent arteriole, ...”
- pg. 843, eqn 17.60 is wrong and as a result so are 17.63 and 17.64.
- pg. 913 Table 19.2, K_C should be K_{Ca} . Add $g_{dark} = 2\mu\text{M}$. In addition, some of the constants in the table are too large, but we aren’t sure yet exactly which ones. Stay tuned.
- pg. 953, eqns 20.32-20.34 are wrong. they should read

Multiplying by $\cos(m\pi x)$, and integrating from 0 to 1 we find

$$\sum_{n=0}^{\infty} \alpha_{mn} A_n = f_m \quad (1)$$

where

$$\alpha_{mn} = -\frac{1}{2}n\pi \sinh(n\pi\sigma)\delta_{nm} + \int_0^1 \frac{2}{Z(x)} [\cosh(n\pi\sigma) \cos(n\pi x) \cos(m\pi x)] dx \quad (2)$$

and

$$f_m = \sigma\delta_{m0} - \int_0^1 \frac{x(2-x) \cos(m\pi x)}{Z(x)} dx. \quad (3)$$