

**Errata to “A Tutorial on the Spectral Theory of Markov Chains” by Eddie Seabrook and Laurenz Wiskott (*Neural Computation*, November 2023, Vol. 35, No. 11, pp. 1713–1796, [https://doi.org/10.1162/neco\\_a\\_01611](https://doi.org/10.1162/neco_a_01611))**

1) Due to a coding error in the original manuscript, the equation label A.11 appears on page 1786 without a corresponding equation. There is no equation A.11 so readers should disregard the equation label.

2) Due to a technical error during production, a number of equations in the published version contained an error. The affected equations contained references to other equations that did not reflect the numbering used in the final published article. The table below reproduces the erroneous equation followed by the corrected version.

The original article at [https://doi.org/10.1162/neco\\_a\\_01611](https://doi.org/10.1162/neco_a_01611) has now been corrected.

Eq. Num.	Published Equation	Corrected Equation
(2.48)	$\boldsymbol{\mu}(t + 1)^T \stackrel{(12)}{=} \boldsymbol{\mu}(t)^T \mathbf{P}$	$\boldsymbol{\mu}(t + 1)^T \stackrel{(2,12)}{=} \boldsymbol{\mu}(t)^T \mathbf{P}$
(2.49)	$\stackrel{(47)}{=} \left( \sum_{\omega=1}^N c_{\omega} \mathbf{I}_{\omega}^T \right) \mathbf{P}$	$\stackrel{(2,47)}{=} \left( \sum_{\omega=1}^N c_{\omega} \mathbf{I}_{\omega}^T \right) \mathbf{P}$
(2.52)	$\boldsymbol{\mu}(t + k)^T \stackrel{(17)}{=} \boldsymbol{\mu}(t)^T \mathbf{P}^k$	$\boldsymbol{\mu}(t + k)^T \stackrel{(2,17)}{=} \boldsymbol{\mu}(t)^T \mathbf{P}^k$
(2.70)	$\boldsymbol{\Pi} \mathbf{P} \stackrel{(67)}{=} \mathbf{P}^T \boldsymbol{\Pi}$	$\boldsymbol{\Pi} \mathbf{P} \stackrel{(2,67)}{=} \mathbf{P}^T \boldsymbol{\Pi}$
(4.11)	$\mathbf{K} \stackrel{(102,96)}{=} \mathbf{D}^{\frac{1}{2}} \mathbf{z}^{-\frac{1}{2}} \mathbf{P} \mathbf{z}^{\frac{1}{2}} \mathbf{D}^{-\frac{1}{2}}$	$\mathbf{K} \stackrel{(4,10,4,4)}{=} \mathbf{D}^{\frac{1}{2}} \mathbf{z}^{-\frac{1}{2}} \mathbf{P} \mathbf{z}^{\frac{1}{2}} \mathbf{D}^{-\frac{1}{2}}$
(4.13)	$\stackrel{(94)}{=} \mathbf{D}^{-\frac{1}{2}} \mathbf{W} \mathbf{D}^{-\frac{1}{2}}$	$\stackrel{(4,2)}{=} \mathbf{D}^{-\frac{1}{2}} \mathbf{W} \mathbf{D}^{-\frac{1}{2}}$
(4.17)	$\stackrel{(104)}{=} \mathbb{1} - \mathbf{D}^{\frac{1}{2}} \mathbf{P} \mathbf{D}^{-\frac{1}{2}}$	$\stackrel{(4,12)}{=} \mathbb{1} - \mathbf{D}^{\frac{1}{2}} \mathbf{P} \mathbf{D}^{-\frac{1}{2}}$
(4.18)	$\stackrel{(105)}{=} \mathbb{1} - \mathbf{D}^{-\frac{1}{2}} \mathbf{W} \mathbf{D}^{-\frac{1}{2}}$	$\stackrel{(4,13)}{=} \mathbb{1} - \mathbf{D}^{-\frac{1}{2}} \mathbf{W} \mathbf{D}^{-\frac{1}{2}}$
(A.10)	$\sum_{i=1}^N (\mathbf{F}^{\pi})_{ij} = \sum_{i=1}^N \pi_i P_{ij} \stackrel{(19)}{=} \pi_j$	$\sum_{i=1}^N (\mathbf{F}^{\pi})_{ij} = \sum_{i=1}^N \pi_i P_{ij} \stackrel{(2,19)}{=} \pi_j$

Eq. Num.	Published Equation	Corrected Equation
(A.20)	$\sum_{i=1}^N \pi_i P_{ij} \stackrel{(94)}{=} \sum_{i=1}^N \pi_i \frac{W_{ij}}{d_i} = \sum_{i=1}^N \frac{d_i}{z} \frac{W_{ij}}{d_i}$ $= \sum_{i=1}^N \frac{W_{ij}}{z} = \frac{1}{z} \underbrace{\sum_{i=1}^N W_{ij}}_{=d_j^-} = \frac{d_j}{z} = \pi_j$	$\sum_{i=1}^N \pi_i P_{ij} \stackrel{(4.2)}{=} \sum_{i=1}^N \pi_i \frac{W_{ij}}{d_i} = \sum_{i=1}^N \frac{d_i}{z} \frac{W_{ij}}{d_i}$ $= \sum_{i=1}^N \frac{W_{ij}}{z} = \frac{1}{z} \underbrace{\sum_{i=1}^N W_{ij}}_{=d_j^-} = \frac{d_j}{z} = \pi_j$
(A.26)	$\langle \mathbf{x}, \mathbf{P}\mathbf{x}' \rangle_{\Pi} \stackrel{(101)}{=} \mathbf{x}^T \Pi \mathbf{P}\mathbf{x}'$	$\langle \mathbf{x}, \mathbf{P}\mathbf{x}' \rangle_{\Pi} \stackrel{(4.9)}{=} \mathbf{x}^T \Pi \mathbf{P}\mathbf{x}'$
(A.29)	$\stackrel{(101)}{=} \langle \mathbf{P}\mathbf{x}, \mathbf{x}' \rangle_{\Pi}$	$\stackrel{(4.9)}{=} \langle \mathbf{P}\mathbf{x}, \mathbf{x}' \rangle_{\Pi}$
(A.35)	$\stackrel{(71)}{=} \sqrt{\pi_i} P_{ji} \frac{\pi_j}{\pi_i} \frac{1}{\sqrt{\pi_j}}$	$\stackrel{(2.71)}{=} \sqrt{\pi_i} P_{ji} \frac{\pi_j}{\pi_i} \frac{1}{\sqrt{\pi_j}}$
(A.45)	$\mathbf{x}^T \mathcal{L}\mathbf{x} \stackrel{(108)}{=} \mathbf{x}^T \mathbf{x} - \mathbf{x}^T \mathbf{D}^{-\frac{1}{2}} \mathbf{W} \mathbf{D}^{-\frac{1}{2}} \mathbf{x}$	$\mathbf{x}^T \mathcal{L}\mathbf{x} \stackrel{(4.18)}{=} \mathbf{x}^T \mathbf{x} - \mathbf{x}^T \mathbf{D}^{-\frac{1}{2}} \mathbf{W} \mathbf{D}^{-\frac{1}{2}} \mathbf{x}$