

Corrigendum to “Asymptotic properties of false discovery rate controlling procedures under independence”

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A minor error has occurred in the definition of the Gaussian processes \mathbb{Z}_0 and \mathbb{Z}_1 in [1, Theorem 3.1]¹. This Theorem should read as follows:

Theorem 3.1 (Donsker). *If the p -values are independent, then*

1. $\sqrt{m} \left(\begin{pmatrix} \widehat{\mathbb{G}}_{0,m} \\ \widehat{\mathbb{G}}_{1,m} \end{pmatrix} - \begin{pmatrix} G_0 \\ G_1 \end{pmatrix} \right) \rightsquigarrow \begin{pmatrix} \mathbb{Z}_0 \\ \mathbb{Z}_1 \end{pmatrix}$ on $[0, 1]$, where \mathbb{Z}_0 and \mathbb{Z}_1 are independent Gaussian processes such that $\mathbb{Z}_0 \stackrel{(d)}{=} \frac{1}{\sqrt{\pi_0}} \mathbb{B}$ and $\mathbb{Z}_1 \stackrel{(d)}{=} \frac{1}{\sqrt{1-\pi_0}} \mathbb{B} \circ G_1$, and \mathbb{B} is a standard Brownian bridge on $[0, 1]$.
2. $\sqrt{m}(\widehat{\mathbb{G}}_m - G) \rightsquigarrow \mathbb{Z}$ on $[0, 1]$, where $\mathbb{Z} = \pi_0 \mathbb{Z}_0 + (1 - \pi_0) \mathbb{Z}_1$ is a Gaussian process with continuous sample paths and covariance function given by

$$\mathbb{E}[\mathbb{Z}(s)\mathbb{Z}(t)] = \pi_0 \gamma_0(s, t) + (1 - \pi_0) \gamma_0(G_1(s), G_1(t)),$$

where γ_0 is the covariance function of \mathbb{B} , that is, $\gamma_0 : (s, t) \mapsto s \wedge t - st$.

\mathbb{Z}_0 , \mathbb{Z}_1 , and \mathbb{Z} should be defined as above throughout the paper. Note that this error has no effect on the main results stated in [1]: neither the regularity conditions, the convergence rates or the form of the limits in distribution are affected. The only consequence is that the asymptotic variances in Theorem 4.2 (ii), Corollary 4.3 (ii), Theorem 4.15 and Corollary 4.16 should be multiplied by $1/\pi_0$.

References

- [1] NEUVIAL, P. (2008). Asymptotic properties of false discovery rate controlling procedures under independence. *Electron. J. Stat.* **2**, 1065–1110. [MR2460858](https://doi.org/10.1214/08-EJS319)

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