Electronic Journal of Statistics
Vol. 3 (2009) 1083
ISSN: 1935-7524
DOI: 10.1214/09-EJS519

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

Pierre Neuvial

University of California at Berkeley, Department of Statistics
367 Evans Hall, Berkeley CA 94720-3860
e-mail: pierre@stat.berkeley.edu

Received October 2009.

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* $\mathbb{Z}_0 \overset{(d)}{=} \frac{1}{\sqrt{\pi_0}}\mathbb{B}$ *and* $\mathbb{Z}_1 \overset{(d)}{=} \frac{1}{\sqrt{1-\pi_0}}\mathbb{B}\circ G_1$, *and* $\mathbb{B}$ *is a standard Brownian bridge on* $[0,1]$.
2. $\sqrt{m}\big(\widehat{\mathbb{G}}_m - G\big) \rightsquigarrow \mathbb{Z}$ *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*

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

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

[1] I am grateful to Marsel Scheer and Helmut Finner for reporting this error.