Corregidum to “Novel whitening approaches in functional settings”

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Due to production errors, Equation 3 in pp. 3 is written as

$$\langle f,g\rangle_{\mathbb{M}}=\sum_{j=1}^{\infty}\lambda_j^{-1}\langle f,\gamma_j\rangle\langle g,\gamma_j\rangle=\left\langle \Gamma^{1/2\dagger}f,\Gamma^{1/2\dagger}g\right\rangle f,\quad g\in\mathbb{M},$$

while it was originally written as

$$\langle f,g\rangle_{\mathbb{M}}=\sum_{j=1}^{\infty}\lambda_j^{-1}\langle f,\gamma_j\rangle\langle g,\gamma_j\rangle=\left\langle \Gamma^{1/2\dagger}f,\Gamma^{1/2\dagger}g\right\rangle\quad f,g\in\mathbb{M}.$$

In §3, the statement reads, “Then, we can use the inner product (3) to construct a space of isotropic functions (i.e., their covariance operator satisfies the identity), so that the space ends up having a certain Gaussian appearance...” The term *space of isotropic functions* is unclear in the current context. Since our whitening operators are mappings defined over T, this does not necessarily imply that the realizations of $\mathbb{X}$ are on the unit sphere $S=\{x\in\mathbb{H}\mid \|x\|^2=1\}$. The isotropy property would be satisfied when whitening the coefficients A in the direction of its transpose, assuming dependencies in a secondary domain exist. Therefore, one could use the following: “....to construct a space of white/orthogonalized functions (i.e., their covariance operator satisfies the identity), so that the space ends up having a certain Gaussian appearance...”

In §4, the sentence “As 2tr $(\Gamma_{X\mathbb{X}})$ is the only dependence between the original and the whitened variable, the minimization problem can be reduced to the maximization of tr $(\Gamma_{X\mathbb{X}})$.” reads also as “.. is the only *dependent term*...”.

In the Technical proofs (first paragraph), due to abuse of notation, in the sentence “Note that Condition 1 cannot be reached when $\langle X,\gamma_j\rangle^2=\lambda_j$, or for $c_j\to c>0$, $\langle X,\gamma_j\rangle^2=\lambda_j c_j$...”, X stands for a deterministic function.

REFERENCES

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