Erratum

The limiting spectral distribution in terms of spectral density

[Random Matrices Theory and Applications, Vol. 5, No. 1 (2016),
 DOI: 10.1142/S2010326316500039]

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Accepted 30 August 2017

Published 8 September 2017

Keywords: Random matrices; correlated entries; limiting spectral distribution; stationary random fields; spectral density.

Mathematics Subject Classification 2010: 60F15, 60G60, 60G10, 62E20, 42A38

There is a misprint in formula (7) of Theorem 1. There is no misprint in its proof. The correct formulation is:

Theorem 1. *Let $(X_{k,\ell})_{(k,\ell) \in \mathbb{Z}^2}$ be a real-valued random field given by (3) with a spectral density $f(x, y)$. Define its scaling $b(x, y)$ by (5) and assume that $\gamma_{k,\ell} = \gamma_{\ell,k}$ for all $(k, \ell) \in \mathbb{Z}^2$. Then, the convergence (4) holds, namely $F^{\mathbb{X}_N(\omega)} \Rightarrow F$ a.s., where F is a nonrandom limiting distribution function whose Stieltjes transform $S(z)$ is uniquely defined by the relations: for every $z \in \mathbb{C}^+$*

$$S(z) = \int_0^1 g(x, z) dx,$$

where, for any $x \in [0, 1]$, $g(x, z)$ is analytic in $z \in \mathbb{C}^+$.

There is $J \subset [0, 1]$, with $\lambda(J) = 1$ such that, for any $x \in J$ and $z \in \mathbb{C}^+$, $g(x, z)$ satisfies the equation

$$g(x, z) = - \left(z + \int_0^1 g(y, z) b(x, y) dy \right)^{-1}.$$

Moreover, for any $x \in [0, 1]$ and $z \in \mathbb{C}^+$

$$\operatorname{Im} g(x, z) > 0, \quad |g(x, z)| \leq (\operatorname{Im} z)^{-1}.$$