Errata for "Large Covariance Matrix Estimation With Oracle Statistical Rate via Majorization-Minimization"

Quan Wei and Ziping Zhao

December 22, 2024

1. In the proof of Lemma 15, the expression $\Lambda_{ij}^{(0)} = \lambda \geq p'_\lambda(u)$ should be corrected to $\Lambda_{ij}^{(0)} = \lambda > p'_\lambda(u)$, which can be easily verified using the definition of $p'_\lambda(\cdot)$.

2. Equation(9),

$$\min_{\mathbf{\Gamma} \succ \mathbf{0},\, \Gamma_{jj}=1} \left\{ \frac{1}{2} \left\| \mathbf{\Gamma} - \mathbf{R} \right\|_F^2 - \tau \log\det \mathbf{\Gamma} + \sum_{i \neq j} p_\lambda(\Gamma_{ij}) \right\}$$

   should be corrected to

$$\min_{\mathbf{\Gamma} \succ \mathbf{0},\, \Gamma_{jj}=1} \left\{ \frac{1}{2} \left\| \mathbf{\Gamma} - \mathbf{R} \right\|_F^2 - \tau \log\det \mathbf{\Gamma} + \sum_{i \neq j} p_\lambda(|\Gamma_{ij}|) \right\}.$$

   This change ensures the inclusion of the absolute value in $p_\lambda(|\Gamma_{ij}|)$, aligning the formulation with the intended mathematical definition.