Erratum: Cryptographic quantum bound on nonlocality [Phys. Rev. A **95, 022108 (2017)]**

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For quantum states ($0 \leq \lambda \leq 1$),

$$\rho = \lambda \rho_0 \otimes |0\rangle\langle 0| + (1 - \lambda) \rho_1 \otimes |1\rangle\langle 1|, \quad \sigma = \lambda \sigma_0 \otimes |0\rangle\langle 0| + (1 - \lambda) \sigma_1 \otimes |1\rangle\langle 1|, \quad (1)$$

the generalized trace distancelike quantity $\tilde{D}$, defined as

$$\tilde{D}(\rho, \sigma) = \max_X \frac{\text{tr } X(\rho - \sigma)}{\sqrt{\text{tr } X^2(\rho + \sigma)}} \quad (2)$$

behaves as $\tilde{D}^2(\rho, \sigma) = \lambda \tilde{D}^2(\rho_0, \sigma_0) + (1 - \lambda) \tilde{D}^2(\rho_1, \sigma_1)$, contrary to $\bar{D}(\rho, \sigma) \equiv \text{tr}|\rho - \sigma| = \lambda \bar{D}(\rho_0, \sigma_0) + (1 - \lambda) \bar{D}(\rho_1, \sigma_1)$. As a result, for a quantum correlation of the form $\mathbf{q} = \lambda \mathbf{p} + (1 - \lambda) \mathbf{l}$, there always exists a realization with $\tilde{D}^{\mathbf{q}} = \sqrt{\lambda} \tilde{D}_x^{\mathbf{p}}$ and $\bar{D}^{\mathbf{q}} = \lambda \bar{D}_x^{\mathbf{p}}$, and $\tilde{C}_{xy}$ is invariant only when C_{xy} is scaled by $\tilde{D}_x$. Therefore, $\tilde{D}_x$ should be read as $\bar{D}_x$ in Lemma 2 and Fig. 2 where the saturation of Eq. (6) inside the set of quantum correlations is discussed. Such a replacement is justified only when Eq. (6) is known to be saturated at extremal points of the set of quantum correlations, where $\tilde{D}_x = \bar{D}_x$. This is indeed the case for Lemma 2 and Fig. 2.