Erratum: Certification of genuine multipartite entanglement in spin ensembles with measurements of total angular momentum [Phys. Rev. A 109, 042402 (2024)]

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When we derived Eq. (15) as a loose upper bound of Eq. (14), we implicitly assumed that the spin ensemble $\{j_n\}_{n=1}^N$ satisfies the property that every bipartition has no spin-zero sectors in their respective partitions, i.e., that

$$\forall \mathbf{J} \in 2^{\{j_n\}_{n=1}^N} \setminus \left\{\varnothing, \{j_n\}_{n=1}^N\right\} : 0 \notin \mathcal{J}(\mathbf{J}), \mathcal{J}(\mathbf{J}^{\complement}). \tag{1}$$

This assumption was not explicitly stated in the original work. Conjecture 2 and Results 1–3 are unaffected, while Conjectures 1 and 3 and Result 4 require this additional assumption. We thank Haobo Ma and Wenlin Zhang for bringing this issue to our attention [1].

[1] H. Ma and W. Zhang, Singlet padding and the universal precession, https://github.com/the-omega-institute/singlet-padding-counterexample (GitHub, San Francisco, 2026).

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