

An Operational Distinction Between Quantum Entanglement and Classical Non-Separability

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Quantum entanglement describes superposition states in multi-dimensional systems, at least two partite, which cannot be factorized and are thus non-separable. Non-separable states also exist in classical theories involving vector spaces. In both cases, it is possible to violate a Bell-like inequality. This has led to controversial discussions, which were resolved by identifying an operational distinction between the classical and quantum cases [1].

References

- [1] N V Korolkova, L Sánchez-Soto and G Leuchs, *Phil. Trans. R. Soc. A* **382**, 20230342 (2024); DOI: 10.1098/rsta.2023.0342