Review of: "The Standard Model Symmetry and Qubit Entanglement"

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The paper presents a well-written and interesting exploration of extending the Kaluza-Klein idea to encompass a wider range of symmetries related to the standard model. The focus is on representations of the D-dimensional Lorentz group in states associated with qubits. Complex numbers, quaternions, and octonions are considered to describe these representations for specific D.

However, the main issue with the paper is that it lacks a clear distinction between original contributions and previously established results. The discussion connects entanglement to dimensional reduction, but it does not provide a concrete physical interpretation of the qubit state parameters and their relation to the standard model or quantum gravity.

The comparison between qubits and higher-dimensional spacetimes is presented up to three qubits, but it remains unclear why the comparison stops there. Additionally, the work does not relate its conclusions to quantum first models or holography principles.

While the paper presents interesting mathematical relations between state spaces of quantum systems and geometry, it falls short of providing concrete insights into the standard model or quantum gravity. The original contributions, especially in section V, point to promising future developments but require further improvement for a detailed explanation of symmetries and parameters in the standard model.

Furthermore, the author's use of terms like "two entangled qubits" seems to imply a new quantum mechanics based on quaternions, rather than complex numbers, which raises confusion about the intended approach. The paper's speculations on octonionic Hopf fibrations lack sufficient explanation and may not be enough to justify publication.

In conclusion, the paper has potential but needs clarity in its original contributions and should be revised to address the mentioned limitations. Additionally, more concrete explanations are required to establish the relationship between quantum mechanics, entanglement, and the standard model.