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Do virtual particles exist in extra dimensions?

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The most updated version of this paper is available at
<https://ojmp.pubpub.org/pub/virtual-particles-extra-dimensions>

1. ***Do virtual particles exist in extra dimensions?***
2. Virtual particles live in the Planck scale.
3. Calabi-Yau extra dimensions probably are of the order of the Planck scale.
4. From (1) and (2) we see that both virtual particles and the Calabi-Yau manifold have the Planck scale as a commonplace.
5. *Virtual particles* might be the *bridge* between our *four-dimensional spacetime* and the world of *extra dimensions*.
6. The short breaking within the laws of physics—such as energy conservation and causality—that happens in the Planck scale might be a signature of the power beheld within the extra dimensions to surpass our known physical laws.
7. Our failure to measure the Planck scale may be related to our current technology.
8. One example of the interactions of a real particle with virtual particles can be found in the quantum jump process.
9. The electron goes from one region to another without traveling the space in between.
10. (9) could be accomplished if the Planck scale provides a shortcut by means of extra dimensions.
11. The quantum jump is an example of a “violation” of the traditional laws of physics.

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