

Copernicus Webinar and Colloquium Series



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More General Relativity

Tuesday 11 April 2023 15:00 (1h 20m)

I will show that the quantum field theory that reproduces classical general relativity, has a slight but non-trivial generalization. The Hilbert space allows for states that violate some of Einstein's equations without creating additional degrees of freedom. This amounts to a "classical background" which is non-dynamical, but effectively redshifts like dark matter. I will go over a toy example, as well as the electromagnetic analog, which includes the violations of Gauss's law. Then I will produce the modified GR equations with a source term. Finally, I will discuss some preliminary thoughts of the provocative phenomenology.

Presenter: KAPLAN, David (Johns Hopkins U.)