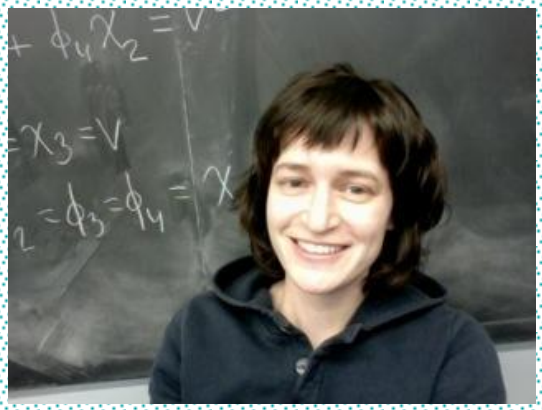
Columbia University
Department of Physics

Theory Seminar

"Massive Gravity and Beyond: A Particle Physics Approach to Modified Gravity"

The discovery of General Relativity (GR) required a leap of insight, from the equivalence principle and general coordinate invariance to a fully non-linear theory governing the dynamics of spacetime. Yet remarkably, by applying the tenets of relativistic quantum field theory to gravity one can arrive systematically at the same theory of GR. In this talk I will review this approach to gravity. I will show how this same approach can also be used to develop consistent non-linear modifications of GR in which the graviton has a small mass, as well as consistent theories of multiple interacting spin-2 fields. These theories improve our understanding of the interplay between gravity and particle physics and provide new approaches to solving the cosmological constant problem."



Rachel Rosen, Columbia University

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