Physics Seminar: Vladimir Narovlansky
Thursday, January 15·2:00 – 3:00pm
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Title: Towards a microscopic description of de Sitter dynamics

Abstract: Understanding a gravitational universe with positive cosmological constant quantum mechanically has been a long standing problem, and even more so for dynamical questions. We will discuss a way to approach this, identifying a quantum mechanical system that is desirable to study. Aiming at a broader understanding, we propose a principle for constructing such a quantum mechanical system microscopically. This proposal knows nothing about de Sitter space, and we should check that it agrees with the known semiclassical results. Moreover, we will make a concrete observation that shows why quantum mechanics and gravity in such a universe are in large tension. We then study this observation in the microscopic construction of the quantum system.