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WATCHING WORLDS COLLIDE

Matthew Kleban

New York University

Abstract

String theory predicts the existence of a huge landscape of phases in which the spectrum of particles and fields, the fundamental "constants" of nature, and even the number of macroscopic dimensions vary. These phases are connected by first-order transitions, and exist simultaneously within different bubbles embedded in an eternally inflating parent phase. The late time distribution of bubbles is a scale-invariant fractal with conformally-invariant correlation functions. Our observable universe is contained inside one such bubble, and it must eventually collide with others. In this talk I describe the effects such collisions can have on the inhabitants of the bubble, the signatures they produce in cosmological observables, and the search for them in the cosmic microwave background radiation.

Date: Friday, July 1, 2011

Time: 11:00

Place: IMBM Seminar Room, Boğaziçi University