



istanbul matematiksel bilimler merkezi
istanbul center for mathematical sciences

SURPRISES WITH INTERACTING HIGH SPIN PARTICLES

Massimo Porrati

New York University

Abstract

We review at first some old and not-so-old no go theorems on massless interacting high spin particles. Besides forbidding certain (or all) interactions of high spin particles with the Standard Model, these theorems also provide guidance in understanding the subtle dynamics of MASSIVE high spin particles. The second part of the talk illustrates some aspects of that subtle dynamics, such as the existence of intrinsic cutoffs –which require a UV completion of high-spin theories–and superluminal propagation in external fields. Open string theory is shown to offer an example of high-spin dynamics with known UV completion, no superluminality, and no extra degrees of freedom propagating in nontrivial backgrounds.

Date: Wednesday, June 15, 2011

Time: 14:00

Place: IMBM Seminar Room, Boğaziçi University