Mini-Course

"Superconformal Chern-Simons theories, M2-branes and supergravity"

by Oren Bergman

Abstract:

In these lectures I will describe a new class of AdS/CFT duals that correspond to multiple membranes in M-theory. The CFTs are novel N=6 superconformal Chern-Simons-matter theories that involve a product gauge group and bi-fundamental matter fields, and a pair of integer valued parameters N and k. By embedding these theories in string theory using simple brane configurations I will argue that they describe the low energy dynamics of M-theory membranes in some simple M-theory backgrounds, which at large N are dual to a class of $AdS_4 \times M^7$ solutions. At large k the dual description reduces to Type IIA string theory on a class of $AdS_4 \times CP^3$ backgrounds.

Schedule:

Monday, 13.10., 14.15, MPI Theory Seminar: "Overview"

Tuesday, 14.10., 10-12, LMU room 349: "N=6 superconformal CS theories"

Wednesday, 15.10., 13-14, LMU room 349: "The relation to M2-branes and SUGRA duals"

Friday, 17.10., 12-14, LMU room 349: "Some generalizations"