SYLLABUS DEL CORSO

Quantum Chaos And Black Holes

2425-1-113R-08

Aims

An introduction to quantum chaos, and its connection to the physics of quantum black holes.

Contents

Introduction to classical chaos, quantum chaos and random matrix theory. BGS conjecture and semi-classical chaos. Thermalization and scrambling, the bound on chaos. JT gravity as a matrix integral, the black hole information paradox, quantum chaos and CFTs, a tensor model for 3D gravity.

Detailed program

PhD Class on Quantum Chaos and Black Holes

For more information on the topics covered, see syllabus.

The class will be held:

Tuesdays 12,19, 26 of November + Dec 10 - 16.30-18.30 @ U2-03
Wednesdays 13,20,27 of November + Dec 11 - 9.30 - 11.30 @ U2 - Room 5017

Prerequisites

Most of the class can be followed simply with a background in quantum mechanics. For the later part of the class, a knowledge of QFT is required and I will assume at least basic knowledge of the AdS/CFT correspondence.

Teaching form

Lectures

Textbook and teaching resource

Lexture notes with references will be available

Semester

Fall

Assessment method

Pass/fail based on presence/interaction during the class.

Office hours

By e-mail

Sustainable Development Goals