

# UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

# SYLLABUS DEL CORSO

# **Quantum Chaos And Black Holes**

2425-1-113R-08

# Obiettivi

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

### Contenuti sintetici

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.

#### Programma esteso

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

Prerequisiti

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.

#### Modalità didattica

Lectures

#### **Materiale didattico**

Lexture notes with references will be available

#### Periodo di erogazione dell'insegnamento

Fall

#### Modalità di verifica del profitto e valutazione

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

## Orario di ricevimento

By e-mail

## **Sustainable Development Goals**