P661 Superstring Theory

Fall 2004

Lecture contents (last updated 11/01/04) :

08/26 Introduction to the bosonic string theory.

08/31 First quantization of the bosonic string and the appearance of the critical spacetime dimension $D = 26$ and the graviton.

09/02 The appearance of Einstein's general relativity.

09/07 Why string theory is free of ultraviolet divergences ?

09/09 The superstring theory

09/14 2-dim. Conformal Field Theory

09/16 OPE in CFT

09/21 Scattering amplitudes

09/23 Polyakov-Faddeev-Popov ghosts

09/28 More on scattering amplitudes

09/30 Coupling constant

10/05 Compactification and T-duality

10/07 Enhanced Gauge Symmetry

10/14 Orbifolds and Orientifolds

10/19 D-branes

10/21 Review of SO(d-1,1)

10/26 Type II superstring theory

10/28 Branes in Type IIB

11/02 Heterotic/Type I superstring theory

11/04 Brane World

11/09 More on Orientifold

11/11 Inter-brane Potential

11/16 Calabi-Yau manifolds

11/18 Cosmic Landscape

11/22 String Cosmology

11/30	Brane Inflation
12/02	Cosmic Strings