



istanbul matematiksel bilimler merkezi  
istanbul center for mathematical sciences

An Introduction to  
**STRING THEORY**

by

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February 7-8, 2011

String theory is a theory to describe nature at the smallest length scales, which replaces the concept of point-like elementary particles by extended strings. At present, it represents the most promising candidate for a quantum theory of gravitation which naturally includes the other elementary forces.

The purpose of this course is to give an elementary introduction to string theory, its history, basic concepts and recent developments.

1. Introduction. History and Motivation. The Classical Bosonic String.
2. Quantization of the Bosonic String. Spectrum and Critical Dimension.
3. Interactions, Vertex Operators and Amplitudes
4. Supersymmetry and Superstrings. D-branes and Dualities.
5. Kaluza-Klein Compactification, Supergravity and Super-Yang-Mills Theory.

	<b>February 7</b>	<b>February 8</b>
09:30-10:30	Lecture 1	Lecture 4
11:00-12:00	Lecture 2	Lecture 5
14:30-15:30	Lecture 3	Lecture 6

**Some reviews:**

- 1) E. Kritis: <http://arxiv.org/abs/hep-th/9709062>
- 2) R. J. Szabo: <http://arxiv.org/abs/hep-th/0207142>
- 3) D. Tong: <http://arxiv.org/abs/0908.0333>

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**Place:** IMBM Seminar Room, Boğaziçi University, [http://www.imbm.org.tr/campus\\_map.htm](http://www.imbm.org.tr/campus_map.htm)