



istanbul matematiksel bilimler merkezi
istanbul center for mathematical sciences

LECTURES ON ELLIPTIC HYPERGEOMETRIC FUNCTIONS

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Abstract

Elliptic hypergeometric functions discovered around 20 years ago are the top level special functions of hypergeometric type. In these introductory lectures, I will avoid abstract notion and rigorous proofs in order to let the participants really see the ideas behind the construction of these functions and some of their applications.

Lecture 1: *A brief survey of ordinary (plain) and basic (q) hypergeometric functions:*

I will try to outline special functions of hypergeometric type, mainly in the context of mathematical physics.

Date and Time: Tuesday, May 2, 2017 at 13:30

Lecture 2: *Elliptic hypergeometric functions:*

I will review the current status elliptic hypergeometric functions. In particular, I will discuss the elliptic gamma function and its properties, the elliptic beta integral (the top know generalization of the Euler beta integral), the elliptic analogue of the Euler-Gauss hypergeometric function and its $W(E_7)$ symmetry and more complicated elliptic hypergeometric integrals.

Date and Time: Wednesday, May 3, 2017 at 13:30

Lecture 3: *Applications of basic and elliptic hypergeometric functions:*

I will talk about applications of these functions in mathematical physics, mainly in integrable models, quantum field theory, knot theory and Painleve equations.

Date and Time: Friday, May 5, 2017 at 13:30

All talks will be held at **IMBM Seminar Room, Boğaziçi University, South Campus.**