

# Complex Dynamics Group Seminar

## **BOUNDARY-VALUE PROBLEMS WITH INITIAL JUMPS FOR SINGULARLY PERTURBED LINEAR INTEGRO-DIFFERENTIAL EQUATIONS**

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### **Abstract**

In the report the singularly perturbed differential equations are studied. The development of the theory of singular perturbations is described. In the given report the three-point boundary-value problem for singularly perturbed integro-differential equations of the third order is studied. The constructive formula of the solution, asymptotic at small parameter ratings of the solution and its derivatives are received. It is established that the solution of the given boundary-value problem in the left point of the considered segment possesses the phenomenon of the initial leap of the zero order. Formulas of initial jumps of the solution and an integrated member are found. Asymptotic convergence of the solution of the given singularly perturbed boundary-value problem is received to the solution of the changed unperturbed boundary problem.

Undergraduate students are also welcome.

**Date:** Thursday, May 17, 2012

**Time:** 16:30

**Place:** M-203 Seminar Room, Department of Mathematics, METU