SEMINAR

Grupo de Análise Funcional e Aplicações
Functional Analysis and Applications Group

Functional Equations and Ulam Stability

A. Ponmana Selvan

Department of Mathematics, Kings Engineering College, Sriperumbudur, India

Abstract

In the seminar, first of all, we are going to discuss the origin of functional equations, history of Functional equations and we will study what naturally the functional equation is. Secondly, we will discuss the historical development and some applications, where the functional equation is used. Then we will discuss the contributions of famous Mathematicians for functional equations to the recent development of this area. And then we will study some important concepts of functional equations with examples, Different forms of functional equations, types of functional equations, specially, Cauchy's equations, D'Alembert's, Abel's, Jensen's functional equations and etc., with general solution. We also investigate the various methods for solving functional equations, like Replacement of variables, substitution method, transforming variables, Reduction to Differential, Difference and integral equations, inductive methods, iterative methods and etc. Mainly, we will investigate few applications of the functional equations in finding area, compound interest, Applications in Engineering field and etc. Finally, we study the Ulam stability of functional equations and Differential equations.

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