HACETTEPE UNIVERSITY MATHEMATICS GENERAL SEMINAR

HACETTEPE ÜNİVERSİTESİ MATEMATİK BÖLÜMÜ GENEL SEMİNERİ

Speaker (Konuşmacı)

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Title (Başlık)

On Discretization of Darboux Integrable Hyperbolic Equations

Abstract (Özet)

A hyperbolic equation $u_{xy}=f(x,y,u,u_x,u_y)$ is called Darboux integrable if there exist two functions $I(x,u,u_x,\dots)$ and $J(x,u,u_y,\dots)$ such that $D_yI=0$ and $D_xJ=0$ on all solutions of the equation. The functions I and J are called x- and y-integrals respectively. The concept of x-, y-integrals can be generalized to semi-discrete and discrete equations of the hyperbolic type. Hence we can define Darboux integrability for semi-discrete and discrete equations. In the present talk we consider the problem of finding semi-discrete analogues of Darboux integrable continuous equations. We require for the obtained semi-discrete equation to be Darboux integrable as well. To find such semi-dıscrete equations we will use the x- or y-integrals.