1003-93-239 **N U Ahmed*** (ahmed@site.uottawa.ca), SITE/Department of Mathematics, University of Ottawa, Ottawa, Ontario K1N6N5, Canada. *Measure Solutions for Impulsive Evolution Equations with Measurable vector Fields.*

In this paper we present some results on the question of existence of measure valued solutions for semilinear impulsive evolution equations on Banach spaces with the nonlinear parts being merely Borel measurable and bounded on bounded sets. This a far reacing generalization of previous results of the author and others. We also consider impulsive differential Inclusions and their potential applications to control theory and uncertain dynamics. The system is governed by differential equations of the form

$$dx(t) = Ax(t)dt + f(x(t))dt + g(x(t-))\nu(dt), x(0) = x_0, t \geq 0$$

where A is the infinitesimal generator of a C_0 semigroup in a separable Banach space E, $f, g : E \mapsto E$ are Borel measurable maps and ν is a signed measure. The paper also considers differential inclusions of the form

$$dx(t) \in -Ax(t)dt + F(x(t))dt + G(x(t-))\nu(dt), x(0) = x_0, t \geq 0$$

where $-A$ is the generator of an anlytic semigroup, F and G are Borel measurable multifunctions with weakly compact convex values. We prove existence of finitely addtive measure valued solutions for these systems and also present some topological properties of the set of measure solutions corresponding to the differential inclusion with applications to control. (Received September 01, 2004)