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Manil Thankamani Mohan* (manil.thankamanimohan@afit.edu), Department of Mathematics and Statistics, 2950 Hobson Way, Building 641, Room 227 A, Wright-Patterson Air Force Base, Dayton, OH 45433, and **Sivaguru S Sritharan** (sivaguru.sritharan@afit.edu), Air Force Institute of Technology, 2950 Hobson Way, Building 646 Room 301, Wright Patterson Air Force Base, Dayton, OH 45433. *Stochastic Quasilinear Evolution Equations in UMD Banach Spaces.*

Tosio Kato established the existence and uniqueness of local in time mild solutions of the Cauchy problem for various quasilinear equations of evolution in one of his seminal papers, "Quasilinear equations of evolution, with applications to partial differential equations". He showed that a wide range of important physical problems can be modeled in a unified manner by a class of quasilinear evolution equations in a Banach space. These examples include the first order symmetric hyperbolic systems, second order nonlinear wave equations, Korteweg-de Vries (KdV) equation, Navier-Stokes equations, Euler equations of fluid dynamics, equations of compressible fluid flow, compressible viscoelastic fluid flow equations, magnetohydrodynamic (MHD) equations, coupled Maxwell and Dirac equations of quantum electrodynamics, and Einstein field equations of general relativity. In this talk we establish the existence and uniqueness up to a stopping time for the stochastic counterpart of Tosio Kato's quasilinear evolutions in UMD Banach spaces. An example of stochastic Euler and Navier-Stokes equation will also be described as an application of abstract theory to concrete models. (Received February 06, 2017)