Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-65-324 **Yanzhao Cao*** (caoy@csit.fsu.edu), Department of Mathematics, Florida A&M University, Tallahassee, FL 32307. *Convergence rate of truncated Herimite polynomial chaos expansion and applications to finite element method for Stochastic Partial differential equations.*

In this paper we will present an estimate of convergence rate of polynomial chaos expansion for generalized random variables in tempered distribution space. The result is applied to finite element solution of stochastic elliptic differential equations to obtain the rate of convergence of the approximate solution for the SPDEs. (Received September 09, 2004)