1157-65-97   **Zhiyan Ding***, 480 Lincoln Dr., Madison, WI 53706. *Validity of Ensemble Kalman Inverse.*
Ensemble Kalman Inverse (EKI), as an algorithm, has been successfully applied on many inverse problems. Why it works, however, is far from being thoroughly understood. In this talk, we will translate the EKI method to a coupled stochastic differential equation, and then in the linear setting use mean-field limit argument to equate the coupled SDE system with a Fokker-Planck type PDE. This leads to the first result that reveals the convergence rate of EKI. (Received January 18, 2020)