

# **Galerkin Method for Stationary Radiative Transfer Equations with Uncertain Coefficients**

Xinghui Zhong (仲杏慧)  
*Zhejiang University*

We study the stationary radiative transfer equation (RTE) with random coefficients. Galerkin type approximation is used, and in random space, orthogonal polynomials associated with the probability distribution of the random variable are utilized as basis functions. Such algorithms have been widely used for kinetic equations with random inputs, but the corresponding numerical analysis is rare. In this talk, we rigorously justify the validity, namely, we study the smoothness of the solution on the random space, and prove the convergence of N-term truncated polynomials under the spectral method framework. The associated numerical tests are conducted to demonstrate our analytical results.