# Gaussian Estimates of the Density of Systems of Non-Linear Stochastic Heat Equations

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**Abstract**: In this talk, we consider a system of non-linear stochastic heat equations on $R^d$ driven by a Gaussian noise which is white in time and has a homogeneous spatial covariance. This system has been proved that the solution has smooth joint density under some suitable regularity and non degeneracy conditions by E. Nualart (2013). The purpose of this paper is to study the lower and upper bounds of the density. The main tool is Malliavin calculus. This is a joint work with Yinghui Shi.