1157-60-359 **Le Chen*** (le.chen@emory.edu), Department of Mathematics, Emory University, 400 Dorman Drive, Atlanta, GA 30322, and **Kunwoo Kim** (kunwoo@postech.ac.kr), 77 Cheongam-Ro, Nam-Gu, Pohang, Gyeongbuk 37673, South Korea. *Stochastic comparison principles for stochastic heat equations.*

In this paper, we establish the stochastic comparison principles, including moment comparison principle as a special case, for solutions to the following nonlinear stochastic heat equation on $\mathbb{R}^d$

$$\left(\frac{\partial}{\partial t} - \frac{1}{2}\Delta\right) u(t,x) = \rho(u(t,x))\, \dot{M}(t,x),$$

where $\dot{M}$ is a spatially homogeneous Gaussian noise that is white in time and colored in space, and ρ is a Lipschitz continuous function that vanishes at zero. These results are obtained for rough initial data and under Dalang's condition, namely, $\int_{\mathbb{R}^d}(1+|\xi|^2)^{-1}\hat{f}(\mathrm{d}\xi) < \infty$, where $\hat{f}$ is the spectral measure of the noise. We establish the comparison principles by comparing either the diffusion coefficient ρ or the correlation function of the noise f. As corollaries, we obtain Slepian's inequality for SPDEs and SDEs. (Received February 02, 2020)