1150-60-91 **Davar Khoshnevisan*** (davar@math.utah.edu), Department of Mathematics, The University of, Salt Lake City, UT 84105, and **Le Chen**, **Jingyu Huang** and **David Nualart**. *Spatial Ergodicity of Stochastic Partial Differential Equations via a Poincare-type Inequality.* Preliminary report.

Consider a parabolic stochastic PDE of the form $\partial_t u = \frac{1}{2}\Delta u + \sigma(u)\eta$, where $u = u(t\,,x)$ for $t \geq 0$ and $x \in \mathbf{R}^d$, $\sigma : \mathbf{R} \to \mathbf{R}$ is Lipschitz continuous and non random, and η is a centered Gaussian noise that is white in time and colored in space, with a possibly-signed homogeneous spatial correlation function f. If, in addition, $u(0) \equiv 1$, then we prove that, under a mild decay condition on f, the process $x \mapsto u(t\,,x)$ is stationary and ergodic at all times $t > 0$. It has been argued that, when coupled with moment estimates, spatial ergodicity of u teaches us about the intermittent nature of the solution to such SPDEs (Bertini and Cancrini, 1995; Khoshnevisan, 2014). Our results provide rigorous justification of such discussions. The proof rests on novel facts about functions of positive type, and a Poincare-type inequality for the occupation measure of SPDEs. (Received June 28, 2019)