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**Pao-Liu Chow\*** ([plchow@math.wayne.edu](mailto:plchow@math.wayne.edu)), Department of Mathematics, Wayne State University, Detroit, MI 48202. *Stationary Solutions of Parabolic Equations in Gauss-Sobolev Space.*

The talk is concerned with a class of parabolic equations related to some stochastic evolution equation in a Hilbert space  $H$  with a unique Gaussian invariant measure  $\mu$ . They consist of Kolmogorov type of equations perturbed by a linear or nonlinear term. Let  $\mathbf{V}$  denote the Gauss-Sobolev space of functions on  $H$  whose first derivatives are square-integrable with respect to  $\mu$ . In the Sobolev space setting, under suitable conditions, the Cauchy problem for the parabolic equation has a unique solution in  $\mathbf{V}$  in a variational sense. It will be shown that, as the time  $t$  tends to infinity, the solution converges to a stationary solution which is a mild solution of the reduced elliptic equation. Some analytical questions about the solutions of the elliptic problem will also be discussed. (Received August 30, 2011)