1106-60-1530 **Bruce K. Driver** (bdriver@math.ucsd.edu) and **Nathaniel Eldredge*** (neldredge@unco.edu), University of Northern Colorado, 501 20th St, Box 122, Greeley, CO 80634, and **Tai Melcher** (melcher@virginia.edu). *Hypoelliptic heat kernels on infinite-dimensional Heisenberg groups.*

A hypoelliptic diffusion is, roughly speaking, a continuous Markov process which locally is only allowed to move in certain specified directions, yet globally is able to roam throughout its state space. A simple example is hypoelliptic Brownian motion on the 3-dimensional Heisenberg group, which can be viewed as a 2-dimensional standard Brownian motion coupled with its Lévy area process. It is a classical result that this process admits a smooth heat kernel.

I will discuss an extension of this result to infinite-dimensional analogues of the Heisenberg group, modeled on abstract Wiener space, as introduced by Driver and Gordina. We show that hypoelliptic Brownian motion on such a group admits (in an appropriate sense) a heat kernel, which enjoys quasi-invariance properties that can be interpreted as smoothness. Our work recovers and extends results of Baudoin–Gordina–Melcher, which they obtained via detailed curvature-dimension estimates, but our methods are based on elementary stochastic calculus. In particular, we obtain new L^p estimates on higher derivatives of the heat kernel. (Received September 13, 2014)