1099-60-322   **Bruce K Driver**, **Nathaniel Eldredge** and **Tai Melcher*** (`melcher@virginia.edu`). *An example of hypoellipticity in infinite dimensions.*

A collection of vector fields on a manifold satisfies Hörmander's condition if any two points are connected by a path whose tangent vectors only lie in the given directions. It is well-known that a diffusion which is allowed to travel only in these directions is smooth, in the sense that its transition probability measure is absolutely continuous with respect to the volume measure and has a strictly positive smooth density.

Smoothness results of this kind in infinite dimensions are typically not known, the first obstruction being the lack of an infinite-dimensional volume measure. We will discuss recent results on a particular class of infinite-dimensional spaces, where we have shown that vector fields satisfying Hörmander's condition generate a diffusion which has a strictly positive smooth density with respect to an appropriate reference measure. (Received February 10, 2014)

1