1052-35-62 **Nathaniel Eldredge*** (neldredge@math.cornell.edu), 593 Malott Hall, Department of Mathematics, Cornell University, Ithaca, NY 14853. *Hypoelliptic heat kernel inequalities on H-type groups.*

One area of interest in the study of heat kernels in the hypoelliptic setting is in trying to obtain estimates of various types, including gradient bounds and pointwise heat kernel estimates. These in turn are related to other functional inequalities such as logarithmic Sobolev inequalities. In recent years, results by Li and by Bakry et al have made progress in this area by establishing such estimates for the sublaplacian on the Heisenberg group. I will discuss extensions of these results to the class of H-type Lie groups which generalize the Heisenberg group, and some of the ideas involved in the proofs. (Received August 17, 2009)