

1079-35-276

Heather Griffin* (hgriffi@uark.edu). *Pointwise Schauder Estimates of Parabolic Equations in Carnot Groups*. Preliminary report.

The goal of this talk is to establish pointwise Schauder estimates for second order parabolic equations of the form

$$\partial_t u(x, t) - \sum_{i,j=1}^{m_1} a_{ij}(x, t) X_i X_j u(x, t) = f(x, t)$$

where X_1, \dots, X_{m_1} generate the first layer of the Lie algebra stratification for a Carnot group. We will begin with a quick introduction to Carnot groups and Taylor polynomials with horizontal vector fields. Using some geometric properties of the parabolic setting and by comparing solutions to their Taylor polynomials, the proof for the estimates will be discussed. (Received January 16, 2012)