**Meeting:** 1002, Pittsburgh, Pennsylvania, SS 12A, Special Session on Geometric Analysis and Partial Differential Equations in Subelliptic Structures

1002-35-191 **Ermanno Lanconelli*** (lanconel@dm.unibo.it), Dipartimento di Matematica, Piazza di Porta S.Donato 5, I-40127 40126 Bologna, Italy. *One side Liouville-type theorems for some classes of Hormander operators.*

Let us consider in $R^{N+1}$ the 2nd order linear operator

$$L = \sum_{j=1}^{m} X_j + X_0 - \partial_t.$$

The $X_j$'s are smooth vector fields in $R^N$. Let $Y := X_0 - \partial_t$ and $L_0 = \sum_{j=1}^{m} X_j + X_0$.

We assume:

(H1)With respect to a suitable dilation group, $X_1, \dots, X_m$ are homogeneous of degree one, whereas $Y$ is homogeneous of degree two.

(H2)Every couple of points $(x,t), (x,\tau)$, with $t > \tau$, can be connected with an oriented admissible curve

Theorem 1. Every a non-negative entire solution to $Lu = 0$ is constant if $u(0,t) = O(t^m)$ as $t$ goes to infinity.

Corollary 2. Every non-negative entire solution to $L_0 u = 0$ is constant.

Assume $L$ is left traslation invariant on a Lie group. Then:

Theorem 3. Let $u$ be a non-negative solution to $L_0 u = 0$ in the halfspace $t < 0$. Then $u(x,t)$ goes to its infimum as $t$ goes to $-\infty$.

If $u$ is continuous up to $t = 0$ and $u(x,0) = O(|x|^m)$ at infinity, then u is constant.

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