1015-35-57 **Jose Ruidival dos Santos Filho*** (santos@dm.ufscar.br), Via Washington Luis, Km 235, 13565-905 Sao Carlos, SP, Brazil, and **Mauricio Fronza da Silva** (mfronza@smail.ufsm.br), Faixa de Camobi, Km 9, Santa Maria, RS 97105-900. *First order real linear partial differential operators solvable on* $C^\infty(\mathbb{R}^n)$. Preliminary report.

In 1967, in his book Locally Convex Spaces and Linear Partial Differential Equations, F. Treves using a notion of convexity of sets with respect to operators due to B. Malgrange and a theorem of C. Harvey, gave a general characterization of globally solvable linear partial differential operators in $C^\infty(X)$, for an open subset X of $\mathbb{R}^n$.

Let $P = L + c$ be a linear partial differential operator with real coefficients on a C^∞ manifold X, here L is a vector field and c a function. When L has no equilibrium point, J. Duistermaat and L. Hörmander gave in 1972 a geometrical meaning to Malgrange's notion of convexity. They used propagation of supports and singularities to characterize global solvability of P on $C^\infty(X)$, giving five equivalent conditions.

Based on Harvey-Treves's result in the geometrical spirit of Duistermaat-Hörmander's characterizations, we give sufficient conditions for global solvability of P on $C^\infty(\mathbb{R}^n)$, in the case L is zero at precisely one point. For this case, conditions on the value of c at the equilibrium point are necessary, these are known as non-resonance's type conditions. (Received January 19, 2006)