Embedding theorems and the Harnack inequality for solutions of nonlinear subelliptic equations. (English. English, French summary)


Summary: “We consider a class of nonlinear subelliptic equations whose model is given by

\[ \sum_{j=1}^{m} X_j^*(|D_L u|^{p-2} X_j u) = 0, \quad 1 < p < \infty. \]

Here, \( X_1, \cdots, X_m \) are \( C^\infty \) vector fields satisfying Hörmander’s hypoellipticity condition and \( X_j^* \) denotes the formal adjoint of \( X_j \). We prove an optimal imbedding theorem of Sobolev type and a uniform Harnack inequality with respect to the metric associated to \( X_1, \cdots, X_m \).”