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**D Maldonado** and **Kabe Moen\***, Department of Mathematics, Box 1146, St. Louis, MO 63130,  
and **Virginia Naibo**. *Multilinear Poincare inequalities for vector fields of Hormander type.*

In this joint work with D. Maldonado and V. Naibo we introduce a weighted Poincare inequality for products of functions. As the classical Poincare inequality fails for  $0 < p < 1$ , the multilinear Poincare inequality is a natural substitute in this situation. We prove such weighted multilinear Poincare inequalities in the subelliptic context associated to vector fields of Hormander type. We do so by establishing multilinear representation formulas and weighted estimates for multilinear potential operators in spaces of homogeneous type. (Received January 26, 2010)