

1099-53-207

Fabrice Baudoin and **Bumsik Kim***, Department of Mathematics, Purdue University, 150 N. University Street, West Lafayette, IN 47906-2067. *Obata's theorem for sub-Riemannian manifolds with transverse symmetries.*

We discuss the Lichnerowicz type theorem and the Obata's sphere theorem on a large class of compact sub-Riemannian manifolds satisfying $CD(\rho_1, \rho_2, \kappa, d)$ - the generalized curvature dimension inequality introduced by F.Baudoin and N.Garofalo. Moreover, applying Escobales' work for Riemannian submersions, we conclude that the manifold must be either 1- or 3-Sasakian sphere when an extremal eigenfunction exists for our Lichnerowicz type estimate. This is a joint work with F.Baudoin. (Received February 09, 2014)