

1042-53-52

**Karin H Melnick\*** ([karin.melnick@yale.edu](mailto:karin.melnick@yale.edu)), Yale University, Department of Mathematics,  
PO Box 208283, New Haven, CT 06511. *Conformal actions of nilpotent groups on  
pseudo-Riemannian manifolds.*

I will present a rigidity theorem for conformal actions of connected nilpotent Lie groups on compact pseudo-Riemannian manifolds: if a type- $(p, q)$  compact manifold  $M$  supports a conformal action of a connected nilpotent group  $H$ , then the degree of nilpotence of  $H$  is at most  $2p + 1$ , assuming  $p \leq q$ . If, moreover, this maximal degree is attained, then  $M$  is conformally equivalent, up to finite covers, to the universal type- $(p, q)$ , compact, conformally flat space. The proofs make use of the canonical Cartan geometry associated to a pseudo-Riemannian conformal structure. This is joint work with Charles Frances. (Received August 03, 2008)