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Corey Hoelscher* (coreyh@math.upenn.edu), Mathematics Department, 209 S. 33rd St., Philadelphia, PA 19104. *Cohomogeneity One Manifolds and Non-negative Curvature.*

Manifolds with non-negative sectional curvature have always played a special role in Riemannian geometry and yet finding examples of such manifolds is particularly difficult. Recently Grove-Ziller constructed a large class of non-negatively curved metrics on manifolds with a cohomogeneity one action, that is, an action on the manifold by a compact Lie group which has orbits of codimension one. Here we will present a classification of compact simply connected cohomogeneity one manifolds in dimensions 5, 6 and 7 and discuss which of these may or may not admit non-negative curvature. (Received September 25, 2006)