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Yueh-Ju Lin* (ylin4@nd.edu), Hurley 255, Department of Mathematics, University of Notre Dame, Notre Dame, IN 46556. *Connected sum construction of constant Q -curvature manifolds in higher dimensions.*

For a compact Riemannian manifold (M^n, g) of dimension $n \geq 6$ with constant Q -curvature and satisfying a nondegeneracy condition, we show that one can construct many examples of constant Q -curvature manifolds by a gluing construction. In particular, we prove the existence of solutions of a fourth-order partial differential equation, which implies the existence of a smooth metric with constant Q -curvature on the connected sum. In this talk, I will begin with definitions of Q -curvature and Paneitz operator, and then give an overview of the gluing procedure. (Received September 09, 2013)