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Zhuang-dan Daniel Guan* (zguan@math.ucr.edu), Department of Mathematics, University of California, at Riverside, Riverside, CA 92521. *compact solvmanifolds with symplectic structures must have at most three steps.*

Thurston used the Kodaira-Thurston manifold as the first example of compact nonkahler symplectic manifold. There are many interests in the compact solvmanifolds with symplectic structures in the last thirty years. Recently, we finally proved a conjecture that the corresponding solvable Lie group has a trivial third commutator. This gave a very strong topological obstruction for the fundamental group of this kind of manifolds and leads to a program to classify this kind of manifolds. (Received July 24, 2009)