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Dimensional restrictions upon counterexamples to Ganea's conjecture

The long standing conjecture by Ganea on the Lusternik-Schnirelmann category was disproved in the late 1990s by means of a family of counterexamples whose least dimensional element has dimension 10. In a previous work, the authors proved that there is a 7-dimensional counterexample. In this work, we present a proof that there is no counterexample to this conjecture with dimension 6 or less. This is joint work with Don Stanley.