1017-57-93   **Thomas Vogel*** (`tvogel@math.upenn.edu`). *Existence of Engel structures.*

Engel structures are non-integrable plane fields on 4–manifolds who share many properties with contact structures. The existence of an Engel structure on a manifolds leads to strong restrictions on the topology of the manifold: Under certain orientation assumptions the tangent bundle of the manifold is trivial.

In this talk we develop a construction which shows that the converse is also true: Every 4-manifold with trivial tangent bundle admits an Engel structure. (Received February 15, 2006)