Tamed and Compatible Symplectic Forms on Four-Dimensional Almost Complex Lie Algebras by Tedi Draghici | Andres Cubas

Abstract Details

We are able to give a complete description of four-dimensional Lie algebras $g$ which satisfy the tame-compatible question of Donaldson for all almost complex structures $J$ on $g$ are completely described. As a consequence, examples are given of (non-unimodular) four-dimensional Lie algebras with almost complex structures which are tamed but not compatible with symplectic forms. Note that Donaldson asked his question for compact four-manifolds. In that context, the problem is still open, but it is believed that any tamed almost complex structure is in fact compatible with a symplectic form.

In this presentation, I will define the basic objects involved and will give some insights on the proof. The key for the proof is translating the problem into a Linear Algebra setting. This is a joint work with Dr. Draghici.

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