

Abstract

In this talk, we show that on any tamed closed almost complex 4-manifold $(M; J)$ whose dimension of J -anti-invariant cohomology is equal to self-dual second Betti number minus one, there exists a new symplectic form compatible with the given almost complex structure J . In particular, if the self-dual second Betti number is one, we give an affirmative answer to Donaldson question for tamed closed almost complex 4-manifolds that is a conjecture in joint paper of Tosatti, Weinkove and Yau.