

1063-57-121

Tian-Jun Li and **Weiyi Zhang*** (wyzhang@umich.edu), Department of Mathematics, 2074 East Hall, 530 Church Street, Ann Arbor, MI 48109. *Nakai-Moishezon Theorem and Donaldson's question for almost complex structures on rational surfaces.*

In this talk, our objectives are tamed and compatible almost complex structures. There are two interesting questions. The classical Nakai-Moishezon theorem (for surfaces) states the duality between ample divisor cone and curve cone for projective surfaces. Demailly-Paun, Buchdahl and Lamari generalized this duality to Kahler surfaces. It is natural to ask for such a duality for almost Kahler surfaces. Another interesting question is raised by Donaldson. He asked that if there is a J-tamed symplectic form, do we have a J-compatible symplectic form as well? We answered these two questions affirmatively for all tamed almost complex structures on spheres bundles over sphere. We also answer them in many interesting cases for other rational four manifolds, including the del Pezzo ones. (Received August 12, 2010)