

Alberto Abbondandolo, Luca Asselle, Barney Bramham
Gerhard Knieper, Stefan Suhr, Kai Zehmisch

Oberseminar Dynamische Systeme

Symplectic structures from almost symplectic structures

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Agustin Moreno
(Heidelberg)

Abstract:

In this talk, we will consider a stabilized version of the fundamental existence problem of symplectic structures. Given a formal symplectic manifold, i.e. a closed manifold M with a non-degenerate 2-form and a non-degenerate second cohomology class, we investigate when its natural stabilization to $M \times T^2$ can be realized by a symplectic form.

We show that this can be done whenever the formal symplectic manifold admits a positive symplectic divisor. It follows that if a formal symplectic 4-manifold, which either satisfies that its positive/negative second betti numbers are both at least 2, or that is simply connected, then $M \times T^2$ is symplectic.

This is joint work with Fabio Gironella, Fran Presas, Laurant Touissant.

Guests are very welcome!