Seminario de Geometría y Topología

Contact Foliations and the Weinstein Conjecture

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Abstract: The Weinstein conjecture poses the question of whether the Reeb flow of any contact form on a closed 3-manifold has a periodic orbit. Hofer proved that this was indeed true for over-twisted contact manifolds and then Taubes settled the question in the positive in the general case. This contrasts with the fact that in manifolds of dimension 3 and higher, vector fields with no periodic orbits can be constructed using plugs.
In this talk we will review the aforementioned results and a foliated analogue of the Weinstein conjecture will be introduced. It will be shown that for general contact foliations the conjecture does not hold, but it does when some leaf is overtwisted.

(This is joint work with Francisco Presas.)

Lugar: Universidad Complutense de Madrid
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Departamento de Geometría y Topología, Sala 225
Fecha y Hora: Martes, 14 de octubre de 2014, 12:00
www.ucm.es/geometria_topologia/curso-academico-2013-2014-8