



POLITÉCNICA

escuela técnica superior de
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UNIVERSIDAD POLITÉCNICA DE MADRID
DEPARTAMENTO DE MATEMÁTICA APLICADA A LA INGENIERÍA INDUSTRIAL

LÍNEAS DE INVESTIGACIÓN

Daniel Fox

Posibilidad de dirigir TFG, TFM y tesis doctoral

1. Differential geometry and geometric analysis of affine, projective, and conformal structures

a. Equiaffine geometry of level sets and ruled hypersurfaces with equiaffine mean curvature zero. *Mathematische Nachrichten* 290 (2017), no. 2-3, 293-320. [arXiv:1503.09108].

b. Functions dividing their Hessian determinants and affine spheres. *The Asian Journal of Mathematics*. Vol. 20, No. 3, pp. 503-530, July 2016. [pdf] [arXiv:1307.5394].

c. A Schwarz lemma for Kähler affine metrics and the canonical potential of a proper convex cone. *Annali di Matematica Pura ed Applicata*. February 2015, Vol. 194, Issue 1, pp. 1-42. [pdf]

d. Geometric structures modeled on affine hypersurfaces and generalizations of the Einstein Weyl and affine hypersphere equations. *Extended Abstracts Fall 2013, Research Perspectives CRM Barcelona (Trends in Mathematics)*, 2015, Birkhäuser Basel. pp. 15-19. (The typos in the references were added by the editors.)

e. Ricci flows on surfaces related to the Einstein Weyl and Abelian vortex equations. *Glasgow Mathematical Journal*. Vol. 56, Issue 03 (Sept., 2014), pp. 569-599. [pdf]

f. WHAT IS ... an affine sphere? *Notices of the American Mathematical Society*. March 2012, Vol. 59, Issue 3. A Chinese translation (pdf) of this article is available in *Mathematical Advances in Translation* Vol. 35 (2), pp. 181-184. (ISSN 1003-3092).

2. Geometric structures supported on symplectic and contact manifolds

a. Symmetries of the space of linear symplectic connections. *Symmetry, Integrability and Geometry: Methods and Applications (SIGMA)* 13 (2017), 002, 30 páginas.

b. Remarks on symplectic sectional curvature. *Differential Geometry and its Applications*. Vol. 50 (February 2017), pp. 52-70. [arXiv:1610.05898].



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c. Infinitesimal affine automorphisms of symplectic connections. Journal of Geometry and Physics. Vol. 106 (2016), pp. 210-212. [arXiv:1511.09258].

d. Critical symplectic connections on surfaces. [arXiv:1410.1468]. (Enviado para su publicación).

3. Nonassociative algebras

a. Left symmetric algebras and homogeneous improper affine spheres. [arXiv:1707.08896]. (Enviado para su publicación).

más información:

<http://138.100.100.254/index/departamentos/maticas/fox/publist.html>