

**Publicacions més rellevants de la línia de recerca:**  
**Geometria Algebraica**

**Referència:** Barja, M.A., Naranjo, J.C. and Pirola, G.P. On the topological index of irregular surfaces. *J. Alg. Geom.*, **16** (2007), pp. 435–458.

**Abstract:** We study the topological index of some irregular surfaces that we call generalized Lagrangian. We show that under certain hypotheses on the base locus of the Lagrangian system the topological index is non-negative. For the minimal surfaces of general type with  $q = 4$  and  $p_g = 5$  we prove the same statement without any hypothesis.

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**Referència:** Casa-Alvero, E. Jacobian quotients, an algebraic proof. *J. Pure App. Alg.*, **208** (2007), pp. 1055–1062.

**Abstract:** We give an algebraic proof of a theorem of H. Maugendre showing how the jacobian quotients of a pair of germs of plane curve may be computed from their simultaneous immersed resolution, thus proving in particular their topological invariance.

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**Referència:** Weimann, M. An interpolation theorem in toric varieties. *Ann. Inst. Fourier*, **58**(4) (2008), pp. 1371–1381.

**Abstract:** In the spirit of a theorem of Wood, we give necessary and sufficient conditions for a family of germs of analytic hypersurfaces in a smooth projective toric variety  $X$  to be interpolated by an algebraic hypersurface with a fixed class in the Picard group of  $X$ .

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