

Seminari de Geometria Algebraica 2006/2007 (UB-UPC)

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<http://atlas.mat.ub.es/sga>

The algebraic fundamental group
of surfaces with small K^2

Margarida MENDES LOPES

Universidade Técnica de Lisboa

If a complex projective surface of general type has a finite (algebraic) fundamental group then it is regular. Xiao Gang proved in 1985 that for minimal surfaces of general type S satisfying $K^2 \leq 3\chi - 1$ either $\pi_1(S)$ is finite or then S has a base point free pencil of hyperelliptic genus 3 curves with at least 4 double fibres.

It turns out that the order of the finite fundamental groups that can occur in this range of invariants is very limited.

This aim of this seminar is to explain these limitations. I will explain the general concepts involved, the results and some of the techniques involved. In particular some recent results (obtained in coloboration with R. Pardini and C. Ciliberto) will be discussed.
