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SEMINARIO DE GEOMETRÍA ALGEBRAICA

Martes 27 de Enero de 2009, **16:00**, Seminario 238

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Impartirá la conferencia

Projective manifolds of sectional genus three and ample vector bundles

Resumen.

Let X be a smooth complex projective variety of dimension n and let $\mathcal{F}$ be an ample vector bundle of rank $n-1$ on X. The curve genus g of $(X,\mathcal{F})$ is defined by $2g-2 = \big(K_X + c_1(\mathcal{F})\big)c_{n-1}(\mathcal{F})$. Pairs $(X,\mathcal{F})$ with low g are completely understood for $g<2$ and partially for $g=2$. As a preliminary step to understand pairs $(X,\mathcal{F})$ with $g=3$ we consider vector bundles $\mathcal{F} = \mathcal{E} \oplus H^{\oplus(n-r-1)}$, where H is an ample line bundle and $\mathcal{E}$ is an ample vector bundle of rank r with a section vanishing on a smooth subvariety Z of X of the expected dimension. In this setting, a structure theorem for triplets $(X,\mathcal{E},H)$ as above will be discussed, under the assumption that the restricted line bundle H_Z is very ample and (Z,H_Z) is a projective manifold of sectional genus three (joint work with Maeda). The proof combines Ionescu's classification of projective varieties of low sectional genus with several results of adjunction theory for ample vector bundles.