

Seminari de Geometria Algebraica 2012/2013 (UB-UPC)

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Geography of fibred varieties and stability

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Consider complex a variety fibred over an irreducible curve, and a family of linear systems on the fibres. There is a natural numerical invariant associated to this data, introduced by Cornalba and Harris: we say that a fibration is f -positive if this invariant is greater or equal to zero. This property has applications on the geography of varieties and on the Picard group of moduli spaces. We will discuss assumptions that ensure f -positivity, most of which involve some notion of stability (GIT, vector bundle stability). We will make a comparison between these concepts. Finally we will present some results where f -positivity can be proven without using stability. This is a joint work with Miguel Angel Barja.
