

Seminari de Geometria Algebraica 2011/2012 (UB-UPC)  
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<http://atlas.mat.ub.es/sga>

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## The banks of the cohomology river

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We give sharp bounds on the vanishing of the cohomology of a tensor product of vector bundles on the  $n$ -dimensional projective space in terms of the vanishing of the cohomology of the factors. For this purpose we introduce regularity indices generalizing the Castelnuovo-Mumford regularity. As an application we give a sufficient condition for a vector bundle to have an unobstructed deformation theory that depends only on the cohomology table of the bundle. We construct complete families of bundles with such cohomology tables.

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