

ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ



ΤΜΗΜΑ ΜΑΘΗΜΑΤΙΚΩΝ

Εβδομαδιαίο Σεμινάριο

Hodge-Riemann relations for valuations and geometric inequalities

Thomas Wannerer

University of Jena

The Hodge-Riemann relations are a property of the cohomology of compact Kähler manifolds. Very recently, J. Kotrbatý has conjectured and proved in several special cases an analogue of the Hodge-Riemann relations in a completely different setting, namely for smooth valuations (finitely additive functions on the family of convex compact subsets of Euclidean space satisfying a smoothness condition). As first observed by S. Alesker, these results directly imply both classical and new geometric inequalities between the mixed volumes of convex bodies. In this talk, we report on these developments and in particular on recent joint work with J. Kotrbatý.