
DAN COMAN, Syracuse University

Convergence of the Fubini-Study currents for singular metrics on line bundles and applications

Let L be a holomorphic line bundle over a compact Kähler manifold X endowed with a singular Hermitian metric h with positive curvature current $c_1(L, h)$. We prove generalizations to this setting of the Tian-Yau-Zelditch theorem, by showing that suitable powers $p^{-k}\gamma_p^k$ of the Fubini-Study currents γ_p associated to the spaces of L^2 -holomorphic sections of $L^{\otimes p}$ converge weakly on X to $c_1(L, h)^k$. As shown by Shiffman and Zelditch in the case of ample line bundles, this yields equidistribution results for the common zero sets of k -tuples of random holomorphic sections of $L^{\otimes p}$ as $p \rightarrow \infty$. We apply this to prove approximation theorems for $c_1(L, h)^k$ by currents of integration along zero sets of holomorphic sections of $L^{\otimes p}$. The results are joint work with George Marinescu.