

Yum-Tong Siu, Harvard U., USA

Vanishing Orders of Jacobian Determinants and Metrics from Sections of Line Bundles

The vanishing orders of multiplier ideal sheaves take over the role of PDE estimates in problems of complex geometry. There are two important techniques involving such vanishing orders. One is the method of differential relations to use Jacobian determinants to reduce vanishing orders, which originated from complex Neumann problems of weakly pseudoconvex domains. Another is the method of precise achievement of vanishing orders of metrics from sections of line bundles, which is the foundation for analytic approaches to effective problems and complex geometry problems involving plurigenera, the finite generation of the canonical ring and the abundance conjecture.