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Dr. Gang Tian has made fundamental contributions to geometric analysis, complex geometry and symplectic geometry. He did his undergraduate study at Nanjing University in China, received his MS at Peking University and PhD at Harvard University. He is now a distinguished professor at Peking University and an E. Higgins professor at Princeton University. Dr. Gang Tian established completely the existence of Kähler-Einstein metrics on compact complex surfaces. He proved that the deformation of Calabi-Yau manifolds is unobstructed. Together with Ruan, he established a mathematical theory of the quantum cohomology and Gromov-Witten invariants. He was one of pioneers in constructing virtual cycles. With Liu, he solved the Arnold Conjecture in the non-degenerate case . He introduced the K-stability which has been further developed and has become a central notion in the theory of geometric stability. He initiated the Analytical Minimal Model program through Kahler-Ricci flow, referred as the Song-Tian program. Together with J. Morgan, amongst others, Dr. Gang Tian helped verifying the proof of the Poincare Conjecture and the Geometrization Conjecture. In 2012, he gave a solution for the Yau-Tian-Donaldson Conjecture in the case of Fano manifolds which has been a driving force in Kahler geometry for last few decades Dr. Gang Tian won Alan T. Waterman Award in 1994 and Veblen Prize in 1996. He spoke twice at the International Congress of Mathematics in 1990 and 2002. He was elected to the National Academy of China in 2001 and the American Academy of Arts and Science in 2004.

Einstein Equation and Kähler Geometry

Abstract
In this general talk, I will present some recent advances in Kähler geometry. The study of Kähler-Einstein metrics was initiated by E. Calabi in the 50's. In the 70's, Yau's solution for the Calabi conjecture settles the case when the scalar curvature is zero. Aubin and Yau solved the case when the scalar curvature is negative. Since then, it has been a very challenging problem to study the existence problem for Kähler-Einstein metrics with positive scalar curvature. Recently, a deep connection has been established between this existence and a variant of the geometric invariant theory I started in the 90s and advocated since then.