



COMPLEX STRUCTURE DEGENERATION AND METRIC COLLAPSING OF CALABI-YAU MANIFOLDS

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Abstract: A Calabi-Yau manifold is a compact Kahler manifold with trivial canonical bundle. Yau's solution to the Calabi conjecture yields canonical Ricci-flat Kahler metrics (Calabi-Yau metric) on such a manifold. It is an interesting question to understand how the Ricci-flat metrics develop singularities when the complex structure degenerates. An especially intriguing phenomenon is that these metrics can collapse to lower dimensions and exhibit very non-algebraic features, and it is challenging to describe the corresponding geometric behavior. In this talk, I will review the status of this problem and explain some recent progress.