

*Department of Mathematics,  
University of California San Diego*

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# Math 258 - Differential Geometry Seminar

**Prof. Yury Ustinovskiy**

CIMS and NYU

## Hermitian curvature flow and uniformization of non-negatively curved Hermitian manifolds

### Abstract:

The classical Gauss's Theorema Egregium and the Uniformization theorem for the Riemann surfaces are illustrations of a prominent theme in geometry – control of the global topology/geometry of a manifold through the bounds on its curvature. In the last decades, with the development of new analytic tools (Yamabe equation, mean-curvature flow etc), this idea has found numerous applications in classification problems. Application of geometric flows (specifically the Ricci flow) turned out to be particularly fruitful in the context of Kaehler (and projective algebraic) geometry. At the same time there are very few efficient analytic methods available in non-Kahler complex geometry. In this talk we will introduce the Hermitian Curvature Flow on an arbitrary compact complex manifold. We will prove a delicate version of the maximum principle for tensors along this flow and present applications to the classification problems for the complex/algebraic manifolds admitting a compatible metric with “semipositive curvature.”

Host: Lei Ni

**Wednesday, May 5, 2021**

**11:00 AM**

**Zoom with ID 917 6172 6136**

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