

# Student Differential Geometry Seminar

Stony Brook University

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**Michael Albanese** : “Kähler-Einstein metrics”

ABSTRACT: As discussed last time, a Riemannian manifold has holonomy contained in the unitary group if and only if the metric is Kähler. Unlike the other cases of reduced holonomy, Kähler metrics need not be Einstein; a metric which is both Kähler and Einstein is called a Kähler-Einstein metric.

We will begin by investigating the curvature tensor of a Kähler metric, which will allow us to determine a necessary cohomological condition for the existence of a Kähler-Einstein metric. Then we will show that the Kähler-Einstein condition is equivalent to the complex Monge-Ampère equation.