

SEMINARIO DI GEOMETRIA E ALGEBRA

UNIBA - POLIBA

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The Chern-Ricci flow on Inoue-Bombieri surfaces

Abstract. In the tentative to move from the Kähler to the non-Kähler setting, one can formulate several problems concerning Hermitian metrics on complex manifolds with special curvature properties. Among these problems, we mention the existence of Hermitian metrics with constant scalar curvature with respect to the Chern connection, and the generalizations of the Kähler-Einstein condition to the non-Kähler setting. They are usually translated and attacked as analytic pdes.

In this context, the Chern-Ricci flow plays an useful role. The Chern-Ricci flow is a parabolic evolution equation for Hermitian metrics that extends the Kähler-Ricci flow to Hermitian manifolds. It is expected that the behaviour of solutions of the Chern-Ricci flow deeply reflects the underlying complex structure. In particular, understanding the behaviour of the Chern-Ricci flow on non-Kähler compact complex surfaces is particularly interesting, due to the fact that minimal class VII surfaces are not yet completely classified.

In this talk, we study the problem of uniform convergence of the normalized Chern-Ricci flow on Inoue-Bombieri surfaces with Gauduchon metrics.

The talk is based on a joint work with Valentino Tosatti, and on collaborations and discussions with Simone Calamai, Francesco Pediconi, Cristiano Spotti, and others.



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