

Algebraic Geometry - Mariusz Koras in memoriam

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THE KORAS-RUSSELL CUBIC THREEFOLD FROM THE HOLOMORPHIC POINT OF VIEW

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ABSTRACT. We will explain the density property for a Stein manifold X , introduced by Varolin. This property is a precise way of saying that the holomorphic automorphism group of X is large. The first and guiding example for such a manifold is \mathbb{C}^n for $n \geq 2$. A conjecture by Varolin and Toth states that a Stein manifold with density property which is diffeomorphic to \mathbb{R}^{2n} has to be biholomorphic to \mathbb{C}^n .

Next we present techniques to prove the density property which were developed by Kaliman and the speaker. Finally we show how to apply those techniques to prove the density property for the Koras-Russell cubic threefold, thus producing a potential counterexample to the Varolin-Toth-Conjecture.

This is a result of our former student Leuenberger.