Mathematics, Statistics, and Computer Science   **@ UIC**

Algebraic Geometry Seminar

Stability conditions on abelian threefolds

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Abstract: I will present a new proof and a generalization a result by Maciocia and Piyaratne on the existence of Bridgeland stability conditions on any abelian threefold. As an application, we deduce the existence of Bridgeland stability conditions on a number of Calabi-Yau threefolds, namely Calabi-Yau threefolds of abelian type and Kummer threefolds.

As in the work of Maciocia and Piyaratne, the idea is to show a Bogomolov-Gieseker type inequality involving Chern classes of certain stable objects in the derived category; this was conjectured by Bayer, Toda, and myself. Our approach uses the multiplication maps on abelian threefolds instead of Fourier-Mukai transforms.

This is joint work with Arend Bayer and Paolo Stellari.

Wednesday, December 3 at 4:00 PM in SEO 427