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Destabilising subvarieties and Nakai-Moishezon type criteria

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Abstract

The Nakai-Moishezon criterion in algebraic geometry and Yau's solution of the Calabi conjecture, when taken together, can be viewed as establishing a correspondence between the solvability of the complex Monge-Ampère equation and the positivity of certain intersection numbers involving proper subvarieties. In complex geometry, many other examples of such correspondences have been discovered recently. In this talk, we will review these discoveries and consider the set of "destabilising subvarieties" for geometric PDEs, that is, those subvarieties which violate the associated positivity criteria, and present some resutls about their geometry and cardinality. This is joint work with Sjöström Dyrefelt.

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