

A PROBLEM LIST FOR K -CORRESPONDENCES

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ABSTRACT. We introduce the notion of K -correspondence, and show that many Calabi-Yau varieties carry a lot of self- K -isocorrespondences, which furthermore satisfy the property of multiplying the canonical volume form by a constant of modulus different from 1. This leads to the introduction of a modified Kobayashi-Eisenman pseudovolume form, for which we are able to prove many instances of the Kobayashi conjecture.

1. TITLE OF TALK: K -CORRESPONDENCES AND INTRINSIC PSEUDO-VOLUME FORMS

2. A PROBLEM LIST FOR K -CORRESPONDENCES

- (1) Disprove one of Lang's conjectures [6]: e.g., show that certain (projective) Calabi-Yau varieties are not covered by families of abelian varieties.
- (2) Study rational equivalence of 0-cycles on Calabi-Yau varieties. The goal is to get the existence of K -correspondences in a more general setting than in [7].
- (3) Study the problem of the existence of self-rational maps of positive degree on Calabi-Yau varieties. I.e., prove that they do not exist generically, (while K -correspondences of positive degree do exist).
- (4) Compare the Kobayashi-Eisenman pseudovolume form with the one I construct in [7].

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