

Ivashkovich, Sergey; Pinchuk, Sergey; Rosay, Jean-Pierre
Upper semi-continuity of the Kobayashi-Royden pseudo-norm, a counterexample for Hölderian almost complex structures. (English) [Zbl 1091.32009](#)
Ark. Mat. 43, No. 2, 395-401 (2005).

Let X be an almost complex manifold, with an almost complex structure tensor J of class C^α , for some $\alpha > 0$. Then, by a result of Nijenhuis-Woolf it is possible to construct for any $(p, V) \in TX$ (the tangent bundle to X) a J -holomorphic disc through p with tangent vector V at the point p . This allows to define the Kobayashi-Royden pseudonorm $F_X(p, V)$ on TX . It is known that F_X is upper semicontinuous, provided that J is $C^{1,\alpha}$ (Ivashkovich-Rosay).

In the article under review the authors show, that the condition of Hölder continuity of J is in general too weak, as that it could imply upper semicontinuity of F_X . They show

Theorem: On the unit bidisc X in \mathbb{C}^2 there exists an almost complex structure J of class $C^{1/2}$ such that F_X is not upper semicontinuous.

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MSC:

32Q60 Almost complex manifolds

32F45 Invariant metrics and pseudodistances in several complex variables

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