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The Hilbert-Smith conjecture for Hölder actions. (English. Russian original) [Zbl 0988.57021](#)
Russ. Math. Surv. 52, No. 2, 407-408 (1997); translation from *Usp. Mat. Nauk* 52, No. 2, 173-174 (1997).

Introduction: The Hilbert-Smith conjecture asserts that every compact group effectively acting on a manifold is a Lie group. It is known that for the solution of this conjecture it is sufficient to prove that the group of p -adic numbers cannot act effectively on a manifold. It was shown in [*D. Repovš* and *E. Shchepin*, *Math. Ann.* 308, No. 2, 361-364 (1997; [Zbl 0879.57025](#))] that the p -adic numbers cannot act on a manifold by Lipschitz homeomorphisms. In this note it is shown that the same is true for Hölder actions with a large Hölder index.

MSC:

[57S10](#) Compact groups of homeomorphisms
[54H15](#) Transformation groups and semigroups (topological aspects)
[22C05](#) Compact groups

Cited in **5** Documents

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