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Infinitesimal rigidity for hyperbolic actions.
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This paper is well written and may be interesting even for nonexperts. Let Γ be a finitely generated group, M a compact manifold and $\varphi\colon \Gamma \times M \to M$ a C^1 action of Γ on M. A point $x \in M$ is periodic for φ if the orbit Γx is finite. The purpose of this paper is to give a short proof of the infinitesimal rigidity of a hyperbolic group action, whenever the periodic points are dense and the group satisfies a vanishing cohomology condition. Applying this result to a C^∞ action φ, the author obtains the C^∞ infinitesimal rigidity for an affine action of a higher rank lattice on the torus T^n. This generalizes previous results of J. Lewis [Trans. Amer. Math. Soc. **324** (1991), no. 1, 421–445; MR 91f:22019] and M. Pollicott ["Infinitesimal rigidity of group actions with hyperbolic generators", Preprint, 1993; per bibl.].

Reviewed by *K. Komiya* (Zbl 839.57027)