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James Keesling* (kees@uf1.edu), Department of Mathematics, University of Florida, Gainesville, FL 32611-8105, and **James Maissen** and **David Wilson**. *A New Approach to the Hilbert-Smith Conjecture*. Preliminary report.

The Hilbert-Smith Conjecture states that if G is a compact group acting effectively on a compact manifold M^n , then G is a Lie group. The conjecture is equivalent to stating that there is no effective action of a p -adic group Δ_p on a compact manifold M^n . The conjecture is known to be true for $n = 1$ and $n = 2$ by classical results. It is known to be true for $n = 3$ by a recent result of John Pardon.

Most of the classical work done on the subject focuses on the quotient space of the action. The present authors have approached the problem focusing on properties of the p -adic action assuming that one exists. There are many new results that have been obtained. (Received January 25, 2014)