

# THE SMALE CONJECTURE FOR LENS SPACES

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(Joint work with Darryl McCullough and Hyam Rubinstein)

S. Smale proved that for the standard round 2 sphere  $S^2$ , the inclusion of the isometry group  $O(3)$  into the diffeomorphism group  $\text{Diff}(S^2)$  is a homotopy equivalence. He conjectured the analogous result holds for the 3-sphere. It was proved affirmatively by A. Hatcher. A natural extension of the Smale conjecture is that if any elliptic (Riemannian 3 manifold with positive constant curvature 1) 3-manifold  $M$  then  $\text{Isom}(M) \rightarrow \text{Diff}(M)$  is a homotopy equivalence. We prove this conjecture confirmatively for lens spaces.

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