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Asymmetrical diffeomorphisms

Which diffeomorphisms of a compact manifold M commute with no other diffeomorphisms (except their own powers)? Smale asked if such highly asymmetrical diffeomorphisms are typical, in that they are dense in the C^r topology on the space of C^r diffeomorphisms $\text{Diff}^r(M)$. In this talk I will explain the recent (positive) solution to Smale's question for C^1 symplectomorphisms and volume-preserving diffeomorphisms. I will also discuss progress on the general case.

This is joint work with Christian Bonatti and Sylvain Crovisier.