1023-37-590 **John Franks*** (john@math.northwestern.edu), Dept. of Math. Northwestern Univ., Evanston, IL 60208, and **Michael Handel** and **Kamlesh Parwani**. *Fixed points of abelian group actions on surfaces.*

We prove that if F is a finitely generated abelian group of orientation preserving C^1 diffeomorphisms of R^2 which leaves invariant a compact set then there is a common fixed point for all elements of F. We also show that if F is any abelian subgroup of orientation preserving C^1 diffeomorphisms of S^2 then there is a common fixed point for all elements of a subgroup of F with index at most two.

In addition we show that if F is an abelian group of C^1 diffeomorphisms isotopic to the identity of a closed surface S of genus at least two then there is a common fixed point for all elements of F. If F is an abelian group of C^1 diffeomorphisms (not necessarily isotopic to the identity) of a closed surface S of genus at least two then F has a subgroup of finite index all of whose elements share a common fixed point. (Received September 18, 2006)