1046-37-2080 **Danny Calegari*** (`dannyc@its.caltech.edu`), c/o Department of Mathematics, California Institute of Technology, Pasadena, CA 91125. *Nonsmoothable locally indicable group actions on the interval.*

The well-known Thurston stability theorem says that a group of C^1 diffeomorphisms of the unit interval is locally indicable. However this statement is not sharp. We use the method of proof to give a new criterion for a group action to not be topologically conjugate to a C^1 action, in terms of the local order structure of orbits. In fact, we can construct faithful actions of free groups on the interval which are not conjugate to C^1 actions.

More refined information should give constructions of actions which are $C^{1+\alpha}$ but not topologically conjugate to $C^{1+\alpha+\epsilon}$ actions, for any fixed $\alpha \in (0,1)$ and any $\epsilon > 0$. (Received September 17, 2008)

1