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Karen Vogtmann* (vogtmann@math.cornell.edu), Mathematics Department, 503 Malott Hall, Ithaca, NY 14853-4201. *Actions of automorphism groups of free groups.*

In recent years, automorphism groups of free groups have been shown to have many features in common with lattices in semisimple Lie groups, though they are not in fact lattices. Many of these features are proved using analogs of classical spaces such as homogeneous spaces and representation varieties, on which these groups act in interesting ways. I will survey our progress on understanding these spaces, and also on understanding rigidity-type phenomena which prevent these groups from acting on very simple spaces. (Received March 02, 2009)