Meeting: 1005, Newark, Delaware, SS 9A, Special Session on Arithmetic Groups and Related Topics

1005-20-56 **Lucy Lifschitz**, Department of Mathematics, University of Oklahoma, Norman, OK 73019, and **Dave Witte Morris*** (Dave.Morris@uleth.ca), Dept of Math and CS, University of Lethbridge, 4401 University Drive, Lethbridge, AB T1K 3M4, Canada. *Some arithmetic groups that cannot act on the line.*

It is known that finite-index subgroups of the arithmetic group $\mathrm{SL}(3,\mathbb{Z})$ have no interesting actions on the real line. This naturally led to the conjecture that most other arithmetic groups (of higher real rank) also cannot act on the line. This problem remains open, but we can now verify the conjecture for many examples. This includes all finite-index subgroups of $\mathrm{SL}(2,\mathbb{Z}[\sqrt{k}])$, where k is any square free integer greater than 1. The proofs are based on the fact, proved by D. Carter, G. Keller, and E. Paige, that every element of these groups is a product of a bounded number of elementary matrices. (Received January 24, 2005)