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Peter Abramenko* (pa8e@virginia.edu), University of Virginia, Department of Mathematics, P.O. Box 400137, Charlottesville, VA 22904. *Group actions on buildings associated to Chevalley groups.*

Let G be a Chevalley group and K a field. In joint work with Matthew Zaresmký we show that a torsionfree subgroup H of $G(K)$ cannot act strongly transitively on the spherical building associated to $G(K)$ or on the corresponding affine building if K is endowed with a discrete valuation. In fact, there does not exist an apartment A such that the stabilizer of A in H acts chamber transitively on A . This leads to many examples of (torsionfree S -arithmetic) groups which act Weyl transitively but not strongly transitively on affine buildings. Previously those examples were only known in the tree case (joint work with Ken Brown). (Received September 07, 2009)