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Kaitlyn A. Perry* (kaperry1@crimson.ua.edu), Tuscaloosa, AL 35404. *Polydegree Properties of Polynomial Automorphisms.*

The group of automorphisms of the affine plane has the structure of an amalgamated free product of the triangular and affine subgroups. This leads us to the polydegree: the unique sequence of degrees of the triangular automorphisms in the amalgamated free product decomposition of the automorphism. The automorphism group is also endowed with the structure of an infinite dimensional algebraic variety. The interaction between these two structures is not well understood. We will discuss the general problem and a new result that a class of automorphisms with a polydegree of length one are contained in the closure (in the Zariski topology) of a set of automorphisms with a polydegree of length 2. In particular, the set of automorphisms with a polydegree $(d+2)$ is contained in the closure of a set of automorphisms with a polydegree $(d,3)$. (Received September 22, 2015)