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Bryan Jacobson* (bryan.j.jacobson@vanderbilt.edu). *Algebraic subgroups of acylindrically hyperbolic groups.*

A subgroup of a group G is called algebraic if it can be expressed as a finite union of solution sets to systems of equations. We prove that a non-elementary subgroup H of an acylindrically hyperbolic group G is algebraic if and only if there exists a finite subgroup K of G such that $C_G(K) \leq H \leq N_G(K)$. We provide some applications of this result to free products, torsion-free relatively hyperbolic groups, and ascending chains of algebraic subgroups in acylindrically hyperbolic groups. (Received September 25, 2017)