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Allison Ganger, Shannon Golden, Brian Kronenthal* (kronenthal@kutztown.edu), **Felix Lazebnik, Carter Lyons** and **Jason Williford**. *Cycles in algebraically defined bipartite graphs.*

For a field \mathbb{F} and a bivariate polynomial $f \in \mathbb{F}[x, y]$, the partite sets P and L of a two-dimensional algebraically defined bipartite graph are each copies of \mathbb{F}^2 , and $(p_1, p_2) \in P$ and $(\ell_1, \ell_2) \in L$ are adjacent if and only if $p_2 + \ell_2 = f(p_1, \ell_1)$. This definition can be generalized to three or more dimensions. In this talk, we will discuss how different choices of f impact the graph's girth (i.e. the length of the smallest cycle it contains). (Received September 09, 2018)