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Upper-triangular polynomial dynamical systems.

For an upper-triangular polynomial dynamical system like $F(x_1, x_2) = (f_1(x_1), f_2(x_1, x_2))$, vertical lines $x_1 = a$ are invariant only when $f_1(a) = a$ is a fixed point of f_1 . These finitely many lines don't give much information about the whole system. On the other hand, over a sufficiently large difference field (L, σ) , there are infinitely many solutions of $f_1(a) = \sigma(a)$, and the corresponding lines $x_1 = a$ are *skew-invariant*. This allows us to leverage our previous work on coordinate-wise polynomial dynamics. This is joint work with Thomas Scanlon.