1129-12-507 **Alice Medvedev*** (medvedev.math.ccny@gmail.com). *Sparse difference equations with high transcendence degree but difference Krull dimension 1.*

For fixed integers r and $m_0, \dots m_r$, the difference equation

$$\prod_{i=0}^{r} (\sigma^{ni}(x))^{m_i} = 1$$

defines a subgroup G_n of the multiplicative group of transcendence degree nr.

We show that whenever no zero of the polynomial $\chi(z) := \sum_{i=0}^{r} m_i z^i$ is a root of unity, the difference Krull dimension of G_n is bounded, independently of n. Indeed, the difference Krull dimension of G_n is 1 whenever $\chi(z)$ is *hereditarily irreducible*, and it usually is. (Received March 21, 2017)