

1040-20-24

**Mark V Sapir\*** ([m.sapir@vanderbilt.edu](mailto:m.sapir@vanderbilt.edu)), Department of Mathematics, Vanderbilt University, Nashville, TN 37221. *Dynamics of polynomial maps over  $p$ -adics and residual properties of HNN extensions of free groups.* Preliminary report.

This is joint work with Alexander Borisov. We prove some recurrent properties of polynomial maps over  $p$ -adics (with arbitrary number of variables). Using this, we show that every ascending HNN extension of a free group contains a finite index subgroup that is residually (finite  $p$ -group). (Received January 03, 2008)