

1099-12-149

Andy R Magid* (amagid@ou.edu), Department of Mathematics, University of Oklahoma,
Norman, OK 73072. *Free Prounipotent Differential Galois Groups*. Preliminary report.

Let F be a differential field of characteristic zero with algebraically closed field of constants. Let F_u be the compositum of all differential Galois extensions of F which have unipotent differential Galois group. It is shown that $\text{Aut}_F(F_u)$ is a free prounipotent group. This is established by proving an embedding theorem which asserts that if $E \supset F$ is a differential Galois extension with (pro)unipotent differential Galois group H and $1 \rightarrow \mathbb{G}_a \rightarrow G \rightarrow H \rightarrow 1$ is a non-trivial extension then there is a differential Galois extension $K \supset F$ containing E and realizing G . (Received February 05, 2014)