1026-12-27 **Arne Ledet*** (`arne.ledet@ttu.edu`), Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX. PGL$_3$ *as a differential Galois group.*

A Picard-Vessiot extension M/K with differential Galois group G is the function field of a G-torsor. The G-torsors are classified by the non-Abelian cohomology $H^1(K, G)$. In cases where this cohomology can be suitably 'parametrised', this allows us to describe the structure of the Picard-Vessiot extensions. This approach will be illustrated in the case of the projective linear group PGL$_3$. (Received February 05, 2007)