1001-16-262 **Ellen E. Kirkman*** (`kirkman@wfu.edu`), Department of Mathematics, Box 7388 Wake Forest University, Winston-Salem, NC 27109, and **James J. Kuzmanovich**. *Fixed Subrings of Noetherian Graded Regular Rings.*

Let A be a Noetherian graded algebra having the Auslander-Gorenstein property, and let G be a finite group of graded automorphisms of A. P. Jørgensen and J. Zhang and N. Jing and J. Zhang have given conditions when the fixed subring A^G also satisfies the Auslander-Gorenstein property; these conditions involve the "homological determinant" of the automorphisms in G. We study groups of graded automomorphisms of down-up algebras and generalized Weyl algebras, and compute the homological determinants of these automorphisms. We use these results to produce some examples of fixed subrings having the Auslander-Gorenstein property. When A is a down-up algebra we use the trace of the elements in G to show in some cases that there are no proper fixed subrings of A having finite global dimension. (Received August 28, 2004)