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**Mara D Neusel\*** (Mara.D.Neusel@ttu.edu), Dept of Math and Stats, Mail Stop 1042, Texas Tech University, Lubbock, TX 79409. *On the Hilbert Ideal.*

Let  $\rho : G \hookrightarrow GL(n, \mathbb{F})$  be a faithful representation of a finite group  $G$ . It induces an action of  $G$  on the symmetric algebra on the dual which, after choosing a dual basis  $x_1, \dots, x_n$ , can be identified with the ring of polynomial functions  $\mathbb{F}[x_1, \dots, x_n]$ . Let  $\mathbb{F}[x_1, \dots, x_n]^G$  be the subring of invariants. The Hilbert ideal is by definition the ideal in the ambient polynomial ring generated by all homogeneous invariants of positive degree. We will study this ideal, in particular w.r.t degree bounds. (Received July 23, 2008)