

1159-13-180

Jack Jeffries* (jack.jeffries@unl.edu) and **Anurag K. Singh.** *Differential operators on classical invariant rings.*

Levasseur and Stafford described the rings of differential operators on various classical invariant rings of characteristic zero; in each of the cases they considered, the differential operators form a simple ring. Towards an attack on the simplicity of rings of differential operators on invariant rings of linearly reductive groups over the complex numbers, Smith and Van den Bergh asked if differential operators on the corresponding rings of positive prime characteristic lift to characteristic zero differential operators. We prove that, in general, this is not the case for determinantal hypersurfaces, as well as for Pfaffian and symmetric determinantal hypersurfaces. We also prove that, with few exceptions, these hypersurfaces do not admit a mod p^2 lift of the Frobenius endomorphism. (Received August 05, 2020)