

1172-13-289

Alessandro De Stefani, Jonathan Montaño* (jmon@nmsu.edu) and **Luis Núñez-Betancourt**. *Blowup algebras of determinantal ideals in prime characteristic.*

We study F-purity and strong F-regularity of blowup algebras. Our main focus is on algebras given by symbolic and ordinary powers of different types of determinant ideals. We use these results to obtain bounds on the degrees of the defining equations for these algebras. We also prove that the limit of the normalized regularity of the symbolic powers of these ideals exists and that their depth stabilizes. Finally, we show that, for symbolic powers of determinantal ideals, there exists a monomial order for which taking initial ideals commutes with taking symbolic powers. To obtain these results we develop the notion of F-pure filtrations and symbolic F-purity. (Received August 30, 2021)