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Alessandro De Stefani, Eloísa Grifo* (grifo@unl.edu) and **Jack Jeffries**. *Symbolic powers in mixed characteristic.*

Symbolic powers have connections with many topics within commutative algebra; over a polynomial ring, the n th symbolic power of a radical ideal contains the polynomials that vanish to order n on the corresponding variety. In this talk, we will discuss an application of differential operators to symbolic powers, and in particular to the problem of bounding the degrees of the elements in the n th symbolic power of I . In a direct summand of a polynomial ring over a field, we can bound degrees by using differential operators; to do something analogous in mixed characteristic, we need an additional tool: p -derivations. (Received August 09, 2021)