1138-13-82   **Jack Jeffries*** (`jackjeff@umich.edu`). *The Smith-Van den Bergh functors.*

In their work on differential operators in positive characteristic, Smith and Van den Bergh define and study the derived functors of differential operators; they arise naturally as obstructions to differential operators reducing to positive characteristic. We will discuss formulas for the ring of differential operators as well as these derived functors of differential operators in terms of local cohomology. One can use this description to relate questions on the behavior of differential operators under base change to questions on p-torsion in local cohomology. We will also connect the vanishing of these functors to some interesting properties of singularities. (Received January 30, 2018)