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**William D. Simmons\*** ([simmons@math.uic.edu](mailto:simmons@math.uic.edu)). *A computational approach to complete differential varieties (by way of model theory)*. Preliminary report.

The fundamental theorem of elimination theory asserts that projective varieties over an algebraically closed field  $K$  are *complete*. That is, if  $V$  is such a projective variety and  $W$  is any algebraic variety defined over  $K$ , then the projection  $V \times W \rightarrow W$  takes Zariski closed sets to Zariski closed sets. Lou van den Dries described a quantifier elimination result for positive formulas that gives an easy proof of the fundamental theorem. W.Y. Pong applied van den Dries' positive quantifier elimination to projective varieties over differentially closed fields of characteristic 0 ( $DCF_0$ ). Here we use Pong's criterion to give new examples of complete differential varieties and describe a computational approach intended to show that finite-dimensional projective differential varieties over  $DCF_0$  are complete. This work is part of the author's thesis research under David Marker. (Received September 25, 2012)