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(aiovchin@math.uic.edu), University of Illinois at Chicago, Department of Mathematics, Statistics, CS, 851 S Morgan St., SEO 322, Chicago, IL 60607, and Agnes Szanto. On effective differential Nullstellensatz.

We discuss an upper bound for orders of derivatives in the effective differential Nullstellensatz. If one differentiates a system of algebraic PDEs up to this bound, one can effectively test if the original differential system is consistent applying only algebraic elimination to the differentiated system. Seidenberg originally posed this problem in 1956 but no complete solution was given. Our solution is via analysing differential elimination algorithms estimating lengths of dicksonian sequences. (Received February 03, 2009)