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*On the complexity of Hrushovski's algorithm.*

We analyze the complexity of Hrushovski's algorithm to compute the Galois group of a linear differential equation of order  $n$  over  $C(t)$ , where  $C$  is an algebraically closed field of characteristic zero. Hrushovski presented his algorithm in a 2002 paper, using model-theoretic language in his explanation of the algorithm's various steps. In a 2015 paper, Feng described the steps using differential-algebraic notions in place of model-theoretic ones. He also turned to complexity considerations in that paper, his analysis beginning with the algorithm's computation of a group that contains the Galois group of the given differential equation. His estimate of a bound for the degrees of defining polynomials of this group was sextuply exponential in  $n$ . In this talk, we will present an improved bound and discuss our approaches to analyzing the complexity of the rest of the algorithm. This is joint work with Andrei Minchenko and Gleb Pogudin. (Received March 17, 2017)