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Linda Brown Westrick* (westrick@math.berkeley.edu). *A lightface analysis of the differentiability rank.*

We examine the computable part of the differentiability hierarchy defined by Kechris and Woodin. In that hierarchy, the rank of a differentiable function is an ordinal less than ω_1 which measures how complex it is to verify differentiability for that function. We show that for each recursive ordinal $\alpha > 0$, the set of Turing indices of $C[0,1]$ functions that are differentiable with rank at most α is $\Pi_{2\alpha+1}$ -complete. This result is expressed in the notation of Ash and Knight. We also discuss connections with related hierarchies. (Received August 27, 2013)