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Joel Specter*, 3400 N. Charles Street, Baltimore, MD 21218-3529. *Producing surjective arboreal Galois representations.*

For most degree n polynomials defined over a number field, the Galois action on the roots is as unrestricted as possible - the splitting field is an S_n extension. In 1985, Robert Odoni found the same is true for polynomial iterates. For each integer k , the Galois group of the splitting field of the k -th iterate of a polynomial of degree n is most often the k -fold iterated wreath product of S_n - the largest group possible for an extension obtained via iteration.

While Odoni's result shows that for every integer k the Galois group of the k -th iterate of most polynomials is as large as possible, his methods do not guarantee the existence of any polynomial that has maximal Galois groups for all iterates, simultaneously. He conjectures that such polynomials exist. In this talk, I will discuss the proof of this conjecture. (Received January 21, 2020)