Irreducible Compositions of Quadratic Polynomials have Regular Structure

A polynomial is called stable if composing it with itself an arbitrary number of times always results in an irreducible polynomial. We expand this notion to sets of more than one polynomial. In particular, we consider sets of monic quadratic polynomials over a finite field, and find a criterion to decide whether all repeated compositions of them are irreducible. Moreover, even if this is not the case, we can describe exactly which compositions are irreducible by showing that they have the structure of a regular language.