IPM 20 - Combinatorics 2009, May 15-21, 2009, IPM, Tehran

Lucas Sequences, Permutation Polynomials, and Inverse Polynomials

Qiang (Steven) Wang
Carleton University
Canada

The Lucas sequence is a second order linear recurring sequence which has the same recurrence relation as Fibonacci sequence but initial values are different. It is one of most elementary combinatorial objects and it has several interesting applications. We introduce so-called generalized Lucas sequences of any order similarly. It can be shown that generalized Lucas sequences over finite prime fields are closely related to permutation behavior of some classes of polynomials and their compositional inverses over some extension fields. We will explore these surprising connections during this talk.