

Positivity certificates for P-recursive sequences

We consider real sequences that satisfy a linear recurrence relation with polynomial coefficients. Algorithms proving the positivity of such sequences are known for recurrences of order 2 or for recurrences of arbitrary order with constant coefficients and whose characteristic polynomial admits a single dominant root. We design an algorithm to prove the positivity for recurrences with polynomial coefficients of arbitrary order, under the same condition on the characteristic polynomial. This algorithm is illustrated by several sequences from the literature.