Analysis Seminar

Title: Fast Evaluation of Real and Complex Polynomials

Speaker: Nicolae Mihalache-Ciurdea (Université Paris-Est Créteil)

Date: Tue 18th April 2023 at 3:00PM

Location: Seminar Room SCN 1.25

Abstract: We propose an algorithm for quick evaluation of polynomials. It preconditions a complex polynomial P of degree d in time O(d log d), with a low multiplicative constant, independent of the precision. Subsequent evaluations of P computed with a fixed precision of p bits are performed in average arithmetic complexity $O(\sqrt{d(p + \log d)}) and memory O(dp). The average complexity is computed with respect to points on the Rie$

The proof is based on an inequality concerning concave maps on the interval.

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