WEI ZHOU, University of Waterloo *Fraction-free Computation of LCM and GCD by values*

Given the values of two univariate polynomials at a set of interpolation points, we examine the problem of computing the values of their least common multiple (LCM) and their greatest common divisor (GCD) at these points. We show that the values of an LCM of two univariate polynomials can be computed directly from the values of the polynomials and the interpolation points without first converting the polynomials to the standard power form. The result is the interpolation data for the LCM of the input polynomials. The values of a GCD can then be computed from the values of the LCM.