FAST ALGORITHMS FOR COMPOSITION AND REVERSION OF FORMAL POWER SERIES (PRELIMINARY VERSION)

R. P. BRENT AND H. T. KUNG

Abstract

In our earlier papers [1, 3], we gave fast algorithms for manipulating dense univariate power series. In this paper, fast algorithms for composition and reversion of dense multivariate power series are presented. The new algorithms require substantially less operations than the best previously known algorithms. The relative advantage of the new algorithms increases with the number of variables in the multivariate power series.

Comments

Only the Abstract is given here. The full paper appeared as [2]. The univariate case is considered in [3], and generalized composition is considered in [4]. It should be noted that most multivariate power series occurring in practice are sparse, i.e. many of the coefficients are zero, but our algorithms do not take advantage of this.

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