

ICM-9405-65 No-missing-term p -adic lifting and its Application in Sparse Polynomial GCD, Paul S. Wang and Mohamed Omar Rayes

ABSTRACT When the multivariate factors being lifted have no missing terms (NMT), a special p -adic lifting technique can be applied. The new method works by solving linear equations and converges quadratically. The NMT p -adic lifting procedure is specified and examples are given to illustrate the algorithm. The effectiveness of this technique is demonstrated by applying it as a sub-algorithm in the sparse modular GCD algorithm for multivariate polynomials.