ADDENDUM TO "FACTORING POLYNOMIALS OVER FINITE FIELDS WITH DRINFELD MODULES"

G. J. VAN DER HEIDEN

After my paper [2] was electronically published by Mathematics of Computation, I came across the PhD thesis of professor I. Y. Potemine [6].

In Section 4.3 of his thesis, an algorithm for factoring polynomials is proposed which is equivalent to the algorithm discussed in my paper. Potemine's algorithm is acknowledged in my PhD thesis [1].

Our algorithms were found independently, both as analogues of H. W. Lenstra's well-known Elliptic Curve Method for factoring integers; cf. [3].

Professor Potemine informed me that there are two even earlier publications in which his algorithm is described; namely [5] and [4]. Nevertheless, a complexity analysis and a comparison with the well-known Cantor–Zassenhaus algorithm can only be found in [2] and [1].

References

- G. J. van der Heiden, Weil Pairing and the Drinfeld Modular Curve, PhD thesis, University of Groningen, 2003.
- [2] _____, Factoring polynomials over finite fields with Drinfeld modules, Math. Comp., 73:317– 322, 2004.
- [3] H. W. Lenstra, Jr., Factoring integers with elliptic curves, Ann. of Math. (2), 126(3):649-673, 1987. MR 89g:11125
- [4] A. Panchishkin, Algorithmes rapides pour factorisation des nombres et des polynômes, test de primalité, courbes elliptiques et modules de Drinfeld, Séminaire de Théorie des Nombres, Université de Caen, Fascicule de l'année 1992–1993, pp. 1–7, 1993.
- [5] A. Panchishkin and I. Potemine, An algorithm for the factorization of polynomials using elliptic modules, In *Proceedings of the Conference "Constructive methods and algorithms in number theory"*, p. 117. Mathematical Institute of AN BSSR, Minsk, 1989 (Russian).
- [6] I. Y. Potemine, Arithmétique des corps globaux de fonctions et géométrie des schémas modulaires de Drinfeld, PhD thesis, l'Université Joseph Fourier, Grenoble, 1997.

Department of Philosophy, University of Nijmegen, P.O. Box 9103, 6500 HD Nijmegen, The Netherlands

E-mail address: g.vdheiden@phil.kun.nl

©2004 American Mathematical Society

Received by the editor December 13, 2003.

²⁰⁰⁰ Mathematics Subject Classification. Primary 11G09, 13P05.