Implementation of GCD Attack with Projective Coordinates on Demyko’s Cryptosystem

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Abstract

GCD attack depends on modifying the cipher text and then get an access to the decryption of the modified cipher text that is discarded identifying as due to bad implementation. In this paper we mount a GCD attack on Demyko’s cryptosystem on elliptic curves. In this we implement the attack by point addition with projective coordinates using a fast computation method. As this involves working only with $x$-coordinates. We start with developing the formulas for the projective coordinates $x:z$ generalizing the ideas of Montgomery and propose to use these formulas to generate the polynomials for the GCD attack.

References

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Index Terms

Computer Science Security
Keywords

Elliptic Curves, Projective Coordinates and Demyko’s Cryptosystem.