

Abstract Submitted
for the DFD09 Meeting of
The American Physical Society

Cryptography with Chaos and Shadowing¹ NEJIB SMAOUI, ALI KANSO, Kuwait University — A novel approach to encrypt a message using chaos and shadowing is presented. The approach is based on two steps: First, a numerical chaotic orbit of the logistic map is used in the shadowing algorithm of Smaoui & Kostelich [Intern. J. Computer. Math. (1998) 70] to show that there exists a finite number of true orbits that shadow the numerical orbit. Then, Baptista's algorithm [Phys. Lett. A (1998) 240] is used on the finite number of maps to encrypt each character of the message. It is shown that the use of the shadowing method in the encryption process enhances the security level.

¹This work was supported by Kuwait University Research Grant No. SM04/07.

Nejib Smaoui
Kuwait University

Date submitted: 05 Aug 2009

Electronic form version 1.4