Abstract Submitted
for the NWS07 Meeting of
The American Physical Society

Correlations of Coupled Logistic Maps JOHN HARRISON, GUS HART, Brigham Young University — Most systems in the world around us are non-linear and often chaotic. Moreover, many systems influence or are influenced by other physical systems. Understanding the behavior of coupled chaotic systems is essential to understanding the many facets of the physical world of our everyday experience. The simplest chaotic system, the logistic map, shows unusual correlations when coupled to second logistic map. We use a Master–Slave coupling, where the first map influences the second, but not the other way. We observe two forms of correlation between the master and slave due to coupling strength. With low coupling the correlations are complex and very interesting. With higher values of coupling the two maps "lock", becoming synchronized. I intend to discuss some of the intricacies of the correlations at low couplings.

John Harrison
Brigham Young University

Date submitted: 17 Apr 2007 Electronic form version 1.4