Abstract Submitted
for the TSF11 Meeting of
The American Physical Society

Electromagnetism of Bacterial Growth AILIYASI AINIWAER — There has been increasing concern from the public about personal health due to the significant rise in the daily use of electrical devices such as cell phones, radios, computers, GPS, video games and television. All of these devices create electromagnetic (EM) fields, which are simply magnetic and electric fields surrounding the appliances that simultaneously affect the human bio-system. Although these can affect the human system, obstacles can easily shield or weaken the electrical fields; however, magnetic fields cannot be weakened and can pass through walls, human bodies and most other objects. The present study was conducted to examine the possible effects of bacteria when exposed to magnetic fields. The results indicate that a strong causal relationship is not clear, since different magnetic fields affect the bacteria differently, with some causing an increase in bacterial cells, and others causing a decrease in the same cells. This phenomenon has yet to be explained, but the current study attempts to offer a mathematical explanation for this occurrence. The researchers added cultures to the magnetic fields to examine any effects to ion transportation. Researchers discovered ions such as potassium and sodium are affected by the magnetic field. A formula is presented in the analysis section to explain this effect.

Ailiyasi Ainiwaer

Date submitted: 06 Sep 2011 Electronic form version 1.4