

Abstract Submitted
for the OSS10 Meeting of
The American Physical Society

An Experimental Evidence of Asymmetrical Electromotive Forces XIAODONG LIU, Wayne State University School of Medicine, Department of Radiation Oncology, Detroit, MI 48201, YU LIANG, Michigan State University, Department of Computer Science, East Lansing, MI 48823, QICHANG LIANG, China Institute of Atomic Energy, Department of Nuclear Physics, Beijing 102413, China — In this work, we observed the asymmetrical electromotive forces (AEMF) between a toroidal solenoid (TS) and a circular parallel plate capacitor (CPPC) due to the displacement current. In the experiment, a TS was connected with a capacitor to compose the first resonant circuit and a CPPC was connected with an inductor to compose the second resonant circuit. The CPPC was placed in the annular center of the TS. Both circuits were excited at the same resonant frequency by a remote signal generator. Turning the first circuit on and off, it is shown that the first circuit supplies an electromotive force to the second circuit. On the contrary, the second circuit does not supply electromotive force to the first one. This is the first time that AEMF was verified. It is anticipated that this effect could be applied to the study of electromagnetic interaction and signal transmission in radio frequency.

Xiaodong Liu
Wayne State University School of Medicine,
Department of Radiation Oncology, Detroit MI 48201

Date submitted: 31 Mar 2010

Electronic form version 1.4