



“Gheorghe Asachi” Technical University of Iasi, Romania



THE EXPOSURE TO ELECTROMAGNETIC FIELD AND ELECTROCARDIOGRAPHIC SIGNAL MODIFICATION TO MEDICAL PERSONNEL

Narcis Iulian Adochiei

*Gheorghe Asachi Technical University Iasi, Faculty of Electrical Engineering,
21- 23 Professor Dimitrie Mangeron Street, 700050 Iasi, Romania
E-mail: atlaswork@yahoo.com; Phone: +40746075769*

Abstract

This paper presents the results of electrocardiography (ECG) signal acquisition, the heart rate variability (HRV) extraction method and the statistical processing of the extracted features on human exposed below the maximum level of exposure of the electromagnetic field. The ECG recordings were acquired in common situation of electromagnetic fields exposure occurring in hospitals: the power line supply (50 Hz), the fluorescent lights tubes (5 KHz - 150 KHz) and the electrosurgical units (ESU). The purpose of the present study is to compare the acquired ECG signal during electromagnetic field (EMF) exposure with the normal ECG signal and to highlight the changes.

Key words: ECG, HRV, human exposure, signal acquisition, wavelet analysis

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