



*“Gheorghe Asachi” Technical University of Iasi, Romania*



---

## **SURVEY OF ELECTROMAGNETIC ENVIRONMENT DUE TO MOBILE COMMUNICATIONS**

**Valeriu David\*, Ionut Nica, Alexandru Salceanu**

*“Gheorghe Asachi” Technical University of Iasi, Faculty of Electrical Engineering, 53 Mangeron Blvd, 700050, Iasi, Romania*

---

### **Abstract**

This paper presents an analysis of the levels of electromagnetic fields caused by cellular base stations or mobile phones, measured in some residential areas. A statistical processing of the data has also been done in order to estimate both the short-term and the long-term variability of the fields caused by cellular base stations in some apartments and on the terraces of the apartment buildings at tens or hundreds of meters distance from the antenna systems. In some places, comparative measurements of the electromagnetic fields were performed, using two different antennas, namely the horn antenna and, respectively, the log periodic antenna, with the aim to determine the electromagnetic fields caused by mobile communication systems. This will allow to estimate the electromagnetic interference on electronic devices or on human beings, namely to calculate the relative exposure index or the specific absorption rate – SAR.

*Key words:* electromagnetic environment, electromagnetic fields measurements, mobile telecommunication systems

---

---

\* Author to whom all correspondence should be addressed: e-mail: [valdavid@ee.tuiasi.ro](mailto:valdavid@ee.tuiasi.ro), Phone:+40232278680 , Fax:+40232237627