

ABSTRACT

The electromagnetic fields and their effects on environment and public health are nowadays becoming an important area of research in Brazil and worldwide.

In the last few years there has been much debate relating to health risks, and some recent studies have been addressed to the users of mobile phones and to the communities that live in the nearby of Base Stations.

The increase of mobile phones that, in 2002, in Brazil, has already reached more than 31.5 million users, and, all over the world, about 1 billion, brings about an increasing number of Base Stations spread everywhere. On the other hand, one observes, in this regard, a very fast growing, both in insertion and dissemination of the new technology, followed, however, by a slow pace in the scientific research on the possible risks to health.

A broad network of Base Stations (RBS's) is needed in order to ensure the covering of the mobile phones in our country. Moreover, the expanded use has brought concern to the scientific community and to the public in general.

In this paper are shown:

- I. The survey of the state of art on possible biological effects resulting from the exposure to radiofrequency (RF) in the living beings;
- II. Methodology in order to evaluate the levels of human exposure to the electromagnetic fields (EMF);
- III. The mapping of Base Stations in the Belo Horizonte municipality, concerning the A, B, C and D bands;
- IV. The characterization of the electromagnetic fields resulting from two mobile phones Base Stations in the Belo Horizonte municipality;
- V. An environmental perception research among the Belo Horizonte's community, living nearby the Base Station: "ERB - Site BH-20, Maxitel", located at Rua do Ouro n.o 1373, Bairro Serra, Belo Horizonte - Minas Gerais;
- VI. Measurements employing a wide band isotropic field gauge, with a fixed time mean level of six minutes, as specified in the international norms and guides;
- VII. Radiated electromagnetic field theoretical estimates and comparisons with the measured values, in field, as well as with the exposure limits recommended by the guidelines international and ANATEL' s ("Agência Nacional de Telecomunicações" : National Telecommunications Agency) guidelines.

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