

## Power-Frequency Electromagnetic Fields In The Home

Farag, AS; Dawoud, MM; Selim, SZ; Cheng, TC; Marcus, AM; Penn, D  
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King Fahd University of Petroleum & Minerals

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### Summary

Attention has recently focused on the low frequency electromagnetic fields in homes. Public are interested in knowing the domestic EMF fields to help determine whether exposure to these fields causes ill health and, in particular, to provide measure of the EMF environment for an epidemiological survey. Information on the sources of home electromagnetic fields and their characteristics will be needed in order to assess long-term or past exposure to such fields and to evaluate effective methods for modifying the levels of fields should that become necessary. Residential measurement consist of a series of spot readings recorded inside frequently occupied rooms. Each spot measurement consists of a single maximum magnetic flux reading recorded by a direct reading instrument at a fixed location and time. Magnetic field recordings in different locations and current readings in different conductors associated with each residence over a one day time period is successfully done. Residential magnetic field sources are identified: nearby transmission and distribution lines, residential grounding system currents, and unusual wiring configurations. Appliance, as magnetic field sources, were also measured. The purpose of this paper is to put into perspective the dominant magnetic fields to which people are exposed at home. The extensive data presented are useful for understanding variations of field levels that can be encountered in various places and for estimating possible residential exposure levels.

### References:

1. BARNES F, 1989, BIOELECTROMAGNETICS, V10, P13
2. BRACKEN TD, 1993, TR102011 EPRI
3. COLEMAN M, IEE INT C EL MAGN FI, P122

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<http://www.kfupm.edu.sa>

4. DIETRICH FM, 1992, TR100061 EPRI
5. DOVAN T, 1993, BIOELECTROMAGNETICS, V14, P145
6. FEVCHTING F, 1993, AM J EPIDEMIOLOG, V138, P145
7. FULTON JP, 1980, AM J EPIDEMIOLOG, V111, P292
8. KAUNE WT, 1987, BIOELECTROMAGNETICS, V8, P315
9. KAUNE WT, 1992, BIOELECTROMAGNETICS, V13, P413
10. KAUNE WT, 1994, BIOELECTROMAGNETICS, V15, P33
11. KAUNE WT, 1994, J EXPO ANAL ENV EPID, V4, P149
12. KAVET R, 1991, EPIDEMIOLOGY, V2, P224
13. KAVET R, 1992, BIOELECTROMAGNETICS, V13, P35
14. KOONTZ MD, 1992, TR101406 EPRI
15. KOONTZ MD, 1994, J EXPO ANAL ENV EPID, V4, P287
16. LONDON SJ, 1991, AM J EPIDEMIOLOG, V134, P923
17. MADER DL, 1990, BIOELECTROMAGNETICS, V11, P283
18. MCDOWALL ME, 1986, BRIT J CANCER, V53, P271
19. MYERS A, 1985, IEEE INT C EL MAGN F, P126
20. POOLE C, 1991, CANCER CAUSE CONTROL, V2, P267
21. SAVITZ DA, 1988, AM J EPIDEMIOLOG, V128, P21
22. SAVITZ DA, 1989, EPIDEMIOLOG REV, V11, P59
23. SEVERSON RK, 1988, AM J EPIDEMIOLOG, V128, P10
24. STEVENS KG, 1987, 21098218
25. TOMENIUS L, 1986, BIOELECTROMAGNETICS, V7, P191
26. WERTHEIMER N, 1979, AM J EPIDEMIOLOG, V109, P273
27. WERTHEIMER N, 1982, INT J EPIDEMIOLOG, V11, P345
28. ZAFFANELLA LE, 1989, EL6509 EPRI
29. ZAFFANELLA LE, 1992, TR100194 EPRI
30. ZAFFANELLA LE, 1993, TR102759VI EPRI

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