

# **Biomagnetism and the biomagnetism laboratory**

Jon P. Joseph

A biomagnetism laboratory has been established at the University of Wisconsin--Madison. This thesis discusses what is involved in the planning and set up of a biomagnetism laboratory.

Also discussed are the results of an MEG study involving a painful stimulus (subcutaneous electric shock). The pain study data show responses at latencies of 150 ms and 250 ms. These latencies are typical of what is found in evoked potential studies but unusual for evoked magnetic field experiments. The data also shows a signal at 90 ms which is in agreement with earlier evoked magnetic field studies.

The dipoles from all of these latencies are localized using a  $\chi^2$  fitting technique. These dipole locations are then placed on MRI scans of the subject.