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Ultra-low field SQUID electron paramagnetic resonance for biomedical applications P. BHUPATHI, B.H. EOM, Division of Physics, Mathematics and Astronomy, California Institute of Technology, K.I. PENANEN, P.K. DAY, I. HAHN, Jet Propulsion Laboratory, California Institute of Technology — We have constructed a SQUID-magnetometer system operating at 4K, for electron paramagnetic resonance (EPR) detection from room temperature samples in magnetic fields of the order of Earth′s field. The magnetometer consists of a home-built gradiometer pick-up coil inductively coupled to the input of a commercially available 2-stage dc SQUID amplifier. Operation at low EPR excitation frequency of a few MHz has advantages of negligible sample heating and finite penetration depth effects in biological systems. The same system can be adapted to detect NMR signals at several kHz range. We describe our detection scheme and discuss the prospects for *in vivo* biomedical EPR imaging.

[X] Prefer Oral Session
[ ] Prefer Poster Session

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