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## Recent Work

### Title

Development of a prototype superconducting magnet for ex-situ NMR spectroscopy

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### Authors

Sabbi, G.L.  
Bartlett, S.E.  
Caspi, S.  
et al.

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**Development of a Prototype Superconducting Magnet  
for Ex-Situ NMR Spectroscopy\***

S.E. Bartlett, S. Caspi, D.R. Dietderich, P. Ferracin, S.A. Gourlay, A.R. Hafalia,  
C.R. Hannaford, A.F. Lietzke, S. Mattafirri, M. Nyman, G.L. Sabbi

*Lawrence Berkeley National Laboratory, Berkeley, CA*

High-resolution NMR spectroscopy normally requires the sample to be immersed in a very strong and uniform magnetic field, a condition that can only be obtained within the bore of large superconducting magnets. However, advanced techniques are being developed to acquire magnetic resonance information on samples that cannot be inserted into the bore of a magnet. In order to perform NMR spectroscopy in ex-situ configurations, a magnetic field with adequate strength and homogeneity needs to be generated. As for conventional NMR, the best performance parameters are obtained using superconducting magnets. We report on the design, fabrication and test of a proof-of-principle prototype providing a field of 3000 Gauss at a distance of 50 mm from the coil, with field homogeneity at the 0.01% level in a cubic centimeter.

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