

Field-Swept NMR Spectra of ^{11}B in Pyrex Glass and ^{93}Nb in NbN Perturbed by Quadrupole Interaction*

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NMR experiments of ^{11}B by both field-swept and high-resolution NMR are reported to probe the electric field gradient at boron sites and its distribution in Pyrex glass. Both spectra are successfully interpreted with the same set of parameters. It is stressed that field-swept NMR experiments to observe total powder spectrum can be helpful to get information on electric field gradients and asymmetry parameters if there exist many nonequivalent sites of atoms, since satellite transitions are affected by the larger first-order quadrupole effect. Field-swept NMR of ^{93}Nb in superconducting NbN powder, prepared by self-propagating high-temperature synthesis, is also reported. A very broad field-swept spectrum disturbed by quadrupole interaction has been observed. The spectrum is simulated by assuming distributions in electric field gradient and Knight shift at Nb sites. It is stressed that a combination of experiments at separated frequencies is important

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