

Pressure Dependence of the EFG in Semimetallic Arsenic and Antimony*

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The pressure variation of the axial EFG at the ion sites in semimetallic arsenic and antimony, at ambient temperature, has been investigated using pulsed NQR. A weakly nonlinear decrease of the EFG is observed in both systems. The data are analyzed in terms of the lattice contribution to the EFG, which involves a lattice of point monopoles immersed in a uniform, compensating, background charge. The pressure dependence of the EFG obtained from the present measurements is far weaker than the pressure dependence of the calculated lattice contribution. Our results support previous suggestions that valence effects are important in determining the EFG in these semimetals.

Key words: EFG; NQR; Arsenic; Antimony; Pressure.

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