^{11}B NMR Study of $Ce_xLa_{1-x}B_6$

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We have carried out ^{11}B NMR experiments on single crystals of $Ce_xLa_{1-x}B_6$ in order to investigate the nature of phase IV. The NMR spectrum undergoes an appreciable broadening by the internal magnetic field as T is lowered in phase IV, and the nuclear spin-lattice relaxation rate, $1/T_1$, exhibits a sharp peak around the phase I-IV boundary. Also, in phase III the amplitude of the antiferromagnetic (AFM) moment is large enough even just below the phase IV-III transition, which suggests that the AFM moment grows considerably in phase IV. These results support the view that phase IV is an AFM ordered phase.

Key words: ^{11}B NMR; $Ce_xLa_{1-x}B_6$; Phase IV; Nuclear Spin-lattice Relaxation; Antiferromagnetic Transition.