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NMR study of ^{133}Cs in new quasi-one-dimensional conducting platinate[1] R.I. LEATHERBURY, J. ALEXANDER, O. GAFAROV, A.A. GAPUD, U. of South Alabama Dept. of Physics, A.P. WEBER, L. PHAM, R.E. SYKORA, U. of South Alabama Dept. of Chemistry, A.P. REYES, P. KUHNS, National High Magnetic Field Laboratory — $Cs_4[Pt(CN)_4](CF_3SO_3)_2$ (TCP) is a new Krogmann's salt, consisting of quasi-one-dimensional conducting chains of Pt with well known properties, especially in the potassium-containing material, KCP. Unlike KCP, however, there are properties unique to TCP, e.g., longer Pt-Pt separation, insulating at room temperature, and non-magnetic. Previous NMR studies on KCP have mainly been on ^{195}Pt, which does not produce a usable NMR signal in TCP; our study utilizes ^{133}**Cs** instead, which are peripheral to the Pt chains. Splitting of spin states due to quadrupole interaction with local electric field gradient has been measured as a function of orientation versus applied static field. Modeling of the frequency shifts reveals consistency with the known symmetry axes of ^{133}**Cs** determined by single-crystal x-ray diffraction. Relaxation time T1 versus temperature reveals a weak relaxation mechanism and absence of magnetism. Relaxation data has a sharp anomaly around 119 K where T1 jumps 3 orders of magnitude, consistent with critical fluctuations but not yet well understood.

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