Small $T_1^{-1}$ peak near $T_c$ in unconventional BCS superconductors
DAVID PARKER, MPIPKS, STEPHAN HAAS, USC Dept. of Physics and Astronomy — It is usually believed that a coherence peak just below $T_c$ in the nuclear spin lattice relaxation rate $T_1^{-1}$ in superconducting materials is a signature of conventional s-wave pairing. We demonstrate that any unconventional superconductor obeying BCS pure-case weak-coupling theory should show a small $T_1^{-1}$ coherence peak near $T_c$, generally with a height between 3 and 15 percent greater than the value at $T_c$. It is due to impurity scattering, magnetic effects, gap anisotropy and other effects that this peak has not been commonly observed.

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