

Abstract: A method is proposed to extend the zero-temperature Hall-Klemm microscopic theory of the Knight shift K in an anisotropic and correlated, multi-band metal to calculate $K(T)$ at finite temperatures T both above and into its superconducting state. The transverse part of the magnetic induction $\mathbf{B}(t) = \mathbf{B}_0 + \mathbf{B}_1(t)$ causes adiabatic changes suitable for treatment with the Keldysh contour formalism and analytic continuation onto the real axis. We propose that the Keldysh-modified version of the Gor'kov method can be used to evaluate $K(T)$ at high \mathbf{B}_0 both in the normal state, and by quantizing the conduction electrons or holes with Landau orbits arising from \mathbf{B}_0 , also in the entire superconducting regime for an anisotropic, multiband Type-II BCS superconductor. Although the details have not yet been calculated in detail, it appears that this approach could lead to the simple result $K_S(T) \approx a(\mathbf{B}_0) - b(\mathbf{B}_0)|\Delta(\mathbf{B}_0, T)|^2$, where $2|\Delta(\mathbf{B}_0, T)|$ is the effective superconducting gap. More generally, this approach can lead to analytic expressions for $K_S(T)$ for anisotropic, multiband Type-II superconductors of various orbital symmetries that could aid in the interpretation of experimental data on unconventional superconductors.