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**Novel Analysis Method to Extract Cu-NMR Parameters and their Temperature Dependence in UCu<sub>4</sub>Ni<sup>1</sup>** EDITH SOTO, OSCAR BERNAL, California State University Los Angeles — We report the temperature dependence of the Cu-NMR parameters in a random powder of UCu<sub>4</sub>Ni as obtained by a novel method of fitting the NMR data. The method relies on the representation of the line as a sum of individual delta-function like components and yields accurate results (to second order in perturbation theory) despite the complicated nature of the spectra. The Cu-NMR spectra in this material contain features arising from the response of Cu nuclei located at two inequivalent sites in the crystal structure of the system. The method works well for these anisotropically broaden NMR spectra (powder pattern), whose character is determined by magnetic and quadrupolar effects. We discuss how the different linewidth components (e.g., quadrupolar and magnetic) are separated and extracted from the fit. We also discuss how this method might work in other instances of inhomogeneously broadened NMR spectra.

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Edith Soto  
California State University Los Angeles

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