

Abstract Submitted
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Microwave Conductivity of $\text{YBa}_2\text{Cu}_3\text{O}_{6.5}$ in the Low Temperature Limit JORDAN BAGLO, JAMES DAY, JAKE BOBOWSKI, SHUN CHI, PINDER DOSANJH, RINAT OFER, BRAD RAMSHAW, LYNNE SEMPLE, RUIXING LIANG, WALTER HARDY, DOUG BONN, University of British Columbia — With adaptation for dilution refrigerator operation, the unique capabilities of bolometric microwave spectroscopy have been introduced to the millikelvin temperature regime. Using this technique we have measured the microwave conductivity of ultra-high purity Ortho-II $\text{YBa}_2\text{Cu}_3\text{O}_{6.5}$ down to below 100 mK, over a continuous frequency range from 0.5 to 20 GHz. The resulting spectra are analyzed in the context of a phenomenological lineshape model for the quasiparticle conductivity. The evolution of the spectra from the low temperature limit sheds new light on the low-energy charge dynamics of $\text{YBa}_2\text{Cu}_3\text{O}_{6.5}$.

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