

Abstract Submitted  
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**Characterizing superconducting thin films using AC Magnetic Susceptibility**<sup>1</sup> C.H. MAHONEY, J. PORZIO, M.C. SULLIVAN, Ithaca College  
— We present our work on using ac magnetic susceptibility to determine the critical temperature of superconducting thin films. In ac magnetic susceptibility, the thin film is placed between two coils. One coil carries an ac signal, creating a varying external magnetic field. We measure the voltage induced in the pick-up coil on the opposite side of the sample and measure how the sample magnetization changes as the temperature changes. We will present our work to use ac susceptibility to determine critical temperature and superconducting volume fraction. Using our own analysis program, we are able to accurately locate the critical temperatures of the samples and determine the transition width. For the superconducting volume fraction, we etch samples in order to control the thicknesses of the sample and measure how much of the material grown on the surface is superconducting.

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