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Probing KT transition using ac current HENGSONG ZHANG, The state university of New York Buffalo, FULIN ZUO, University of Miami — We report studies of the Kosterlitz-Thouless (KT) transition in thin Tin films using an ac excitation current rather than the conventional dc current. The nonlinear dependence or power-law exponent of the voltage on current is probed by measuring the harmonic terms of the voltage signal. The voltage can in general be expressed as a sum of odd-powered current terms with the experimentally measured power exponent increasing with lowering temperature. The temperature and current dependence of the exponent have been studied and will be discussed in terms of vortex-antivortex pair and pair-pair interactions.

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