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Luttinger-Liquid signature in scanning tunneling spectra of Li0.9Mo6O17 R. MATZDORF, J. HAGER, Institute of Physics, University of Kassel, D-34109 Kassel, Germany, M.A. CAZALILLA, Donostia International Physics Center, 20018 Donostia, Spain, R. JIN, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee 37831, USA, J. HE, Department of Physics, University of Tennessee, Knoxville, TN 37996,USA, D. MANDRUS, E.W. PLUMMER, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831, USA and University of Tennessee, Knoxville, TN 37996, USA — We present low-temperature scanning tunneling spectroscopy data from the quasi one-dimensional purple bronze $Li_{0.9}Mo_6O_{17}$. Our spectra show clearly a power-law behavior in density of states around Fermi-energy (-50meV $<$ E $<$ +50meV) with an exponent of $\alpha = 0.6$. Temperature dependent spectra between T = 5K and 50K are well-described using a model that involves tunneling into a Luttinger-Liquid at finite temperature. We do not observe any signature in the density of states near T = 24K where a insulator-to-metal transition has been reported. Finally we will discuss our data within the model of a zero bias anomaly (ZBA). However, this model does not describe the experimental data as well as the Luttinger-model does. (Oak Ridge national Laboratory, managed by UT-Battelle, LLC, for the U.S. Dept. of Energy under contract DE-AC05-00OR22725)

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