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Doping Dependence of Scanning Tunneling Spectroscopy on Single Crystal Ba($Fe_{1-x}Co_x$)$_2As_2$ SHUHENG PAN, ANG LI, Department of Physics and Texas Center for Superconductivity, University of Houston, JIHUA MA, Department of Physics and Texas Center for Superconductivity, University of Houston /Department of Physics, Boston College, JARED O'NEAL, Department of Physics and Texas Center for Superconductivity, University of Houston, A. SEFAT, M. MCGUIRE, B. SALES, D. MANDRUS, Oak Ridge National Laboratory, R. JIN, E. PLUMMER, Department of Physics and Astronomy, Louisiana State University, DEPARTMENT OF PHYSICS AND TEXAS CENTER FOR SUPERCONDUCTIVITY, UNIVERSITY OF HOUSTON TEAM, DEPARTMENT OF PHYSICS, BOSTON COLLEGE COLLABORATION, OAK RIDGE NATIONAL LABORATORY COLLABORATION, DEPARTMENT OF PHYSICS AND ASTRONOMY, LOUISIANA STATE UNIVERSITY COLLABORATION — We have used a low temperature STM to investigate the density of states (DOS) on atomically clean (001) surface of single crystals Ba($Fe_{1-x}Co_x$)$_2As_2$with Co doping level from x = 0 to 0.20 at 4.2 K. The data set includes the parent compound, the entire superconducting dome, and into the normal metal. With increasing doping concentration the tunneling spectrum shows a systematic evolution. We will present the details of such a spectral evolution and compare them with the band structure derived from ARPES experiments and theoretical calculations.

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