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Electronic Scattering Rates in the High-T_c Superconductor $Bi_{2.1}Sr_{1.9}Ca(Cu_{1-y}Fe_y)_2O_x$ STEPHEN PARHAM, THEODORE REBER, YUE CAO, JUSTIN WAUGH, Univeristy of Colorado, GENDA GU, Brookhaven National Laboratory, DANIEL DESSAU, Univeristy of Colorado — We investigate the effects of Fe impurities in bi-layer BSCCO. It is known that substituting Fe for Cu in this material reduces T_c, but the mechanism for this decrease is not well understood. We have developed a technique that utilizes ARPES to quantitatively measure the effects of impurities on electronic scattering. Using this technique we investigate the details of how Fe impurities cause an increase in the pair-breaking scattering rate in bi-layer BSCCO.

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