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Structure, spin-stripe order, and superconductivity in $La_{1.905}Ba_{0.095}CuO_4$ with and without 1% Zn substitution of Cu[1] JINSHENG WEN, UC Berkeley/BNL, Z. XU, G. XU, Q. JIE, M. HUCKER, BNL, A. ZHELUDEV, W. TIAN, B. WINN, J. ZARESTKY, ORNL, D. SINGH, NCNR, T. HONG, ORNL, Q. LI, G. GU, J. TRANQUADA, BNL — We have performed susceptibility, thermal transport, and neutron scattering measurements to study the effect of Zn and magnetic field on the structure, spin-stripe order and superconductivity, and the interplay between them in $La_{1.905}Ba_{0.095}CuO_4$ with and without 1% Zn. It is shown that the bulk superconductivity is depressed by either the Zn doping or the magnetic field, spin stripe order is enhanced, and the structure is unaffected. For a range of magnetic field, the spin stripe order appears to stabilize a quasi-two-dimensional vortex glass phase.

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