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**Magnetic Neutron Scattering Study of $\mathbf{Nd_{1.85}Ce_{0.15}Cu_{1-y}M_yO_4}$ (M = Zn, Fe, Ni) Single Crystals** INNA VISHIK, Department of Physics, Stanford University, GUICHUAN YU, Department of Applied Physics, Stanford University, EUGENE MOTOYAMA, Department of Physics, Stanford University, PATRICK MANG, Department of Applied Physics, Stanford University, OWEN VAJK, NIST Center for Neutron Research, MARTIN GREVEN, Department of Applied Physics and Stanford Synchrotron Radiation Laboratory, Stanford University — In order to arrive at a deeper understanding of the interplay between superconductivity and magnetism in the high-temperature superconductors, it is of interest to study the effects of impurity-doping on the copper site. A large body of work along these lines exists for several hole-doped materials, yet relatively little is known about the effects of such impurities on the prototypical electron-doped material $(Nd,Ce)_2CuO_{4+\delta}$. Paramagnetic dopants (Ni,Fe) have been shown to lower $T_c$ much more abruptly than non-magnetic ones (Zn). We have extended some of the previous work done on polycrystalline systems by growing large single crystals of $Nd_{1.85}Ce_{0.15}Cu_{1-y}M_yO_4$ (M = Zn, Fe, Ni) using the traveling-solvent floating-zone technique. In particular, we report our initial results for the in-plane charge transport measurements, as well as neutron scattering measurements of the Néel temperature $T_N$ and the two-dimensional spin correlation lengths for temperatures above $T_N$.

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