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Combined Magnetic Phase Diagram of Cation- and Anion- doped Lanthanum Cuprates ZHENG WU, PEI-HERNG HOR, Dept. of Physics and Texas Center for Superconductivity, University of Houston, Houston, TX77204-5005 — We have studied doping dependences of antiferromagnetic (AF) transition temperatureT_N in $La_2CuO_{4+\delta}$for $0 < \delta < 0.01$. For $\delta < 0.005$, we have observed and stabilized a weak ferromagnetic-like anomaly that appears right before T_N. The suppression of T_N due to doped holes is identical to that in $La_{2-x}Sr_xCuO_4$ for 0< x < 0.01. For $\delta > 0.005$, we observed a phase separation into a $T_N \sim 250$K AF phase and $T_c \sim 30$K superconducting phase. Comparing the magnetic phase diagrams of both cation (Sr)- and Anion (O)- doped lanthanum cuprates we conclude that the dopant effects are very important and should be included in the interpretation of any data above 1% doping level. We present a unified "intrinsic" magnetic phase diagram of doped cuprates.

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