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Investigation of Fermi & Luttinger surfaces in $\text{Ca}_{2-x}\text{Na}_x\text{CuO}_2\text{Cl}_2$ using ARPES SIMON BELL, San Jose State University, GEY-HONG GWEON, JIANQIAO MENG, UC Santa Cruz, K.H. KIM, H.G. LEE, Pohang University of Science & Technology, S.I. LEE, Seogang University — The electronic structure & occupancy of doped cuprate superconductors $\text{Ca}_{2-x}\text{Na}_x\text{CuO}_2\text{Cl}_2$ of various doping levels is probed using angle-resolved photoemission spectroscopy (ARPES). The Fermi surface investigated shows that the Luttinger sum rule involving only the Fermi surface fails to account for the particles sum rule. Instead, the Luttinger rule that involves both the Fermi surface and the Luttinger surface seems necessary. We argue that such a generalized sum rule indicates the importance of very strong electron correlations.

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