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Hall conductivity spectral weight in electron and hole doped cuprates[1] H. D. DREW, Physics Department, University of Maryland, College Park, MD — The optical conductivity quasiparticle spectral weight in optimally electron and hole doped cuprates is suppressed to about 25% of value predicted by band stucture.[1] This suppression is due to Mott-Hubbard correlations caused by strong coulomb interactions. These correlations inter the longitudinal conductivity and the Hall conductivity differently. We have investigated the Fermi-liquid like behavior of the electron doped $Pr_{1.82}Ce_{0.18}CuO_4$ (slightly overdoped) and optimally hole doped $Bi_2Sr_2CaCu_2O_{8+\delta}$ using a spectral weight analysis of the Hall conductivity. In both materials the Hall conductivity spectral weight was found to be suppressed to about 10% of the band value. This more substantial suppression of the Hall spectral weight addresses fundamental questions concerning the effects of Mott and antiferromagnetic correlations on the transport properties of strongly correlated materials. [1] A. J. Millis, *et. al.*, Phys. Rev. B72, 224517 (2005).

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