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IR Hall Effect for reconstructed Fermi surfaces[1] DENNIS DREW, Physics Department, University of Maryland — The IR Hall Effect in the presence of Fermi surface reconstruction is considered within a density wave model for a 2D metal. Reconstruction of a hole like Fermi surface can produce reconstructed electron-like or hole-like Fermi surfaces. For hole-like reconstruction the inverse Hall frequency ($1/\omega_{\rm H}$) remains positive. For an electron like reconstruction $1/\omega_{\rm H}$ remains hole-like for small density wave gaps and passes continuously through zero as the gap become larger and the electron-like pockets becomes convex. These considerations are applied to IR Hall data on under doped YBCO. It is concluded that the reconstructed Fermi surface in under doped YBCO is hole-like.

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