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Inter-band scattering effects in the Chevrel phase superconductors ANSON CHEUNG, University of Cambridge — Recent scanning tunneling spectroscopy on the Chevrel phases $SnMo_6S_8$ and $PbMo_6S_8$ by Petrović et al. (PRL **106**, 017003 (2011)) demonstrates clear signatures of multi-band superconductivity. In contrast with MgB_2, where there is extremely weak scattering between the σ and π bands, the inter-band scattering rate is relatively high compared to the intra-band scattering rate in the Chevrel phases. We calculate the quasi-classical Green's function in the presence of strong inter-band scattering and derive comparable results to the measured density of states. We make predictions for proposed measurements on the vortex cores.

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