

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**Planar-coordinated**

**nickelates, isoelectronic to overdoped cuprates: an LDA+DMFT comparison** CHUCK-HOU YEE, GABRIEL KOTLIAR, KRISTJAN HAULE, Rutgers University — We show the Ni-O planes in the bilayer and trilayer T'-type nickelates, recently synthesized by Poltavets, *et al.* [1], are electronically analogous to the Cu-O planes in overdoped superconducting cuprates. The density of states, Fermi surface, nickel valence and mass renormalization, computed using LDA+DMFT, are in good agreement with available experiment, and indicate that the compounds are well-described by multilayer Hubbard physics. Significant interlayer coupling generates bonding-antibonding Fermi surfaces, similar to those seen in the cuprates. We investigate the possibility that interlayer coupling can explain the presence of a phase transition with  $R \log 2$  entropy in the trilayer, and the absence of such a transition in the bilayer.

[1] Poltavets, *et al.*, Phys. Rev. Lett. **104**, 206403 (2010).

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Date submitted: 23 Dec 2010

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