A DMFT study of Na$_x$CoO$_2$  

CHRIS MARIANETTI, GABRIEL KOTLIAR, Rutgers University — Various recent experiments have roughly mapped out the phase diagram of Na$_x$CoO$_2$ (versus $x$) in an effort to understand the basic electronic structure. Interestingly, the magnetic susceptibility has been observed to be Curie-Weiss-like near NaCoO$_2$, and Pauli-like near CoO$_2$. This is counterintuitive given that NaCoO$_2$ is believed to be a band insulator, and CoO$_2$ is in the vicinity of the hydrated superconductor. LDA+DMFT calculations are presented in order to shed light on why signatures of correlations (ie. Curie-Weiss behavior) are observed near what is believed to be a band insulator (ie. NaCoO$_2$).