1113-46-249 **Ben Wallis*** (z1019463@students.niu.edu), Dekalb, IL 60115, and **Gleb Sirotkin**. *Closed ideals in $\mathcal{L}(X)$ and $\mathcal{L}(X^*)$ when X contains certain copies of ℓ_p and c_0.*

Let X denote a Banach space, and let $\mathcal{L}(X)$ denote the space of continuous linear operators acting on X. An ideal of $\mathcal{L}(X)$ is a linear subspace $\mathcal{J}$ of $\mathcal{L}(X)$ which is closed under composition with arbitrary operators in $\mathcal{L}(X)$, i.e. such that if $A, B \in \mathcal{L}(X)$ and $T \in \mathcal{J}$ then $BTA \in \mathcal{J}$. It is called closed if it is closed in the norm topology of $\mathcal{L}(X)$. We show that there are uncountably many closed ideals in $\mathcal{L}(\ell_p \oplus \ell_q)$ for $1 \leq p < q \leq \infty$, and in $\mathcal{L}(\ell_p \oplus c_0)$ for $1 \leq p < 2$. This finishes answering a longstanding question of Pietsch (1978). Additional results are obtained for Rosenthal's X_p spaces and Woo's $X_{p,r}$ generalizations thereof. This is joint work with Gleb Sirotkin. (Received August 24, 2015)