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**Roxana Popescu\*** (rop42@pitt.edu), Pittsburgh, PA 15260. *Grothendieck Operators and Weakly  $p$ -summable series.*

We will discuss a result of A. Pełczyński and W. Szlenk regarding the natural embedding of the Banach space  $\ell_1$  into  $\ell_p$  as a Grothendieck operator for  $p \geq 2$ . As a corollary, we will see that a more general result holds for weakly unconditionally convergent series in an arbitrary Banach space  $X$ . However, it turns out that this is no longer true when we move to the case of weakly  $p$ -summable and unconditionally  $p$ -summable series for  $p > 1$ . (Received September 24, 2018)