

1087-46-149

**Wei-Kai Lai\*** ([laiw@mailbox.sc.edu](mailto:laiw@mailbox.sc.edu)), 807 Hampton St., Walterboro, SC 29488. *A Rearrangement Inequality on Projective and Injective Tensor Products*. Preliminary report.

In 1934, Hardy, Littlewood and Polya introduced a rearrangement inequality:

$$\sum_{i=1}^m a_i b_{(m+1-i)} \leq \sum_{i=1}^m a_i b_{\sigma(i)} \leq \sum_{i=1}^m a_i b_i,$$

in which the real number sequences  $(a_i)_i$  and  $(b_i)_i$  are in increasing order, and  $\sigma(i)$  indicates a random permutation. If instead, we use a sequence in  $\ell_p$ , still denoted  $(a_i)_i$ , and a sequence in a Banach lattice  $X$ , denoted  $(b_i)_i$ , with a technique introduced by Bu and Buskes in 2006 we can show that in Wittstock injective tensor product,  $\ell_p \tilde{\otimes}_i X$ , and Fremlin projective tensor product,  $\ell_p \hat{\otimes}_F X$ , the rearrangement inequality still exists. (Received December 02, 2012)