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Chang-Pao Chen* (cpchen@wmail.hcu.edu.tw), Center for General Education, Hsuan Chuang University, Hsinchu, ROC 30092, Taiwan. *Estimates of the modular-type operator norm of an integral operator over spherical cones.*

This paper provides an extended survey of my joint works in [3], [4], [5]. It is related to the study of Hardy-Knopp-type inequalities, Pólya-Knopp-type inequalities, and weighted norm inequalities. In [4], the Muckenhoupt-type estimate of the modular-type operator norm has been established. As a result, the Hardy-Knopp-type inequalities and the n -dimensional extensions of Levinson's, Stepanov's, Heinig's results can be derived. In [3] and [5], we introduced a new type of limit process to evaluate the modular-type operator norm. That would lead us to get the multidimensional extensions of Pólya-Knopp-type inequalities with general measures. Our results generalize Levin-Cochran-Lee-type inequalities and Carleson's result with an improvement in the estimates given. Furthermore, we have also provided new proofs of Persson-Stepanov's and Wedestig's results regarding to Pólya-Knopp-type inequalities. (Received September 03, 2015)