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Hardy-Littlewood-Nikol'skii inequalities with variable parameters

In this talk, we discuss the asymptotic behavior of the quantity

$$\sup_{T_n} \frac{\|\mathcal{D}(\psi)(T_n)\|_q}{\|\mathcal{D}(\varphi)(T_n)\|_p}, \qquad 0 < p < q \leq \infty,$$

where supremum is taken over all nontrivial trigonometric polynomials T_n of degree at most n and $\mathcal{D}(\psi), \mathcal{D}(\varphi)$ are the Weyl-type differentiation operators. Several applications will be considered.