THE SELECTIVE SUMMATION INEQUALITIES OF NONCONCENTRATION AND SUPERORTHOGONALITY

PHILIP GRESSMAN

We will discuss several families of fundamental inequalities that have the property that they bound structured sums of terms by sums of strict subsets of those terms (a feat which would be plainly impossible to accomplish for arbitrary sums). Key applications/examples of such inequalities appear when, for example, making a priori transversality assumptions in proofs of restriction or decoupling. In particular, we will discuss a new non-positive family of inequalities of this sort which have interesting and unifying consequences for the notion of "superorthogonality."