

Markus Weimar

Mathematisches Institut, Friedrich-Schiller-Universität Jena, Germany

On error bounds for L_∞ -approximation of smooth functions

In this talk we study the worst case error of L_∞ -approximation for multivariate smooth functions $f: [c_1, c_2]^d \rightarrow \mathbb{R}$ from certain weighted spaces F_d^γ . Since it is well-known that we can reach an excellent rate of convergence with respect to n , the amount of information on f used by an approximation-algorithm, we especially consider the dependence of the error bounds on the dimension d . It turns out that this dependence is strongly connected to the weight γ which characterizes the function space.

We will present a general lower bound theorem and discuss its application to several important classes of weights.