

Title: The Haar system as a basis in various function spaces

Andreas Seeger, University of Wisconsin-Madison

Abstract: Consider the classical orthogonal system  $\mathcal{H}_d$  of Haar functions on  $[0, 1)^d$  or  $\mathbb{R}^d$ . Let  $W$  be a space of functions measuring smoothness, i.e. a Sobolev space, Besov space etc. One asks whether  $\mathcal{H}_d$  is a basic sequence in  $W$ , a Schauder basis in  $W$ , or an unconditional basis in  $W$ . We report on various new results which have been obtained in joint work with Gustavo Garrigós and Tino Ullrich.