

Nonlinear approximation in α -modulation spaces

The α -modulation spaces are a family of spaces that contain the Besov and modulation spaces as special cases. In this paper we prove that brushlet bases can be constructed to form unconditional and even greedy bases for the α -modulation spaces. We study m -term nonlinear approximation with brushlet bases, and give complete characterizations of the associated approximation spaces in terms of α -modulation spaces.