Multiresolution Analysis, Haar Bases and Wavelets on Riemannian Manifolds

Stephan Dahlke

Institut für Geometrie
und Praktische Mathematik
RWTH Aachen
Templergraben 55
52056 Aachen
Germany

Abstract

In this paper, the concept of a multiresolution analysis approximation of functions on $I\!R^n$ is generalized to specific Riemannian manifolds. An existence theorem based on generalized Haar functions is proved, and the associated Haar wavelets are constructed.

Key Words: Multiresolution analysis, Riemannian manifolds, Haar bases, wavelets.

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