Wavelet transforms on spheres — a brief survey

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In this brief survey, some recent constructions of the spherical wavelet transforms are mentioned. The following are the constructions I presented at "Symposium on Applied Mathematics". This survey is far from complete.

1) The spherical wavelet transforms introduced by Rubin are associated with appropriate analytic operator families ([4]).

2) The wavelet transforms on $L_2(\mathbb{R})$ and $L_2(\mathbb{R}^2)$ are generalized to tangent bundles TS^1 and TS^2 by Dahlke and Maass ([2]). Specific groups that admit square-integrable representations in $L_2(TS^1)$ and $L_2(TS^2)$ are considered.

3) The concept of a multiresolution analysis on $\mathbb{R}^n$ is generalized to specific Riemannian manifolds by Dahlke ([1]).

The wavelet transforms on $\mathbb{R}^n$ are defined with microlocal views in mind by myself ([3]).

REFERENCES

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