

The Affine Uncertainty Principle in One and Two Dimensions

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

Peter Maass *
Fachbereich Mathematik
Universität Potsdam
Postfach 601553
14415 Potsdam
Germany

Abstract

In this paper, we construct families of wavelets that minimize an uncertainty relation associated with square integrable representations of some canonical groups. Especially, we obtain a new interpretation of the Mexican hat function.

Key Words: Square integrable representations, wavelet transform, uncertainty principle, self-adjoint operators.

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