

INVARIANCE AND STABILITY OF GABOR SCATTERING FOR MUSIC SIGNALS

Roswitha Bammer

University of Vienna, Austria

roswitha.bammer@univie.ac.at

A feature extractor based on Gabor frames and Mallat's scattering transform is introduced. The resulting Gabor scattering is applied to a simple model for audio signals in order to study invariance properties and deformation stability. In particular, it is shown that different layers create invariance to certain signal features.

The decoupling technique previously used to investigate deformation stability of scattering transforms for Cartoon functions is applied to investigate to which extent the feature extractor is robust to changes in spectral shape and frequency modulation. The results are illustrated by numerical examples.

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