Abstract Submission

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IDENTIFICATION AND SEPARATION OF NOISES WITH SPECTRO-TEMPORAL PATTERNS

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Abstract Body: Acoustic signals often contain perceptually detectable noise patterns with spectro-temporal structures, causing sensations like roughness (due to modulated signal components) and tonality. Technical sounds or environmental noises are often composed of several such components. It is assumed that perceptual evaluations of complex scenarios show larger deviations because test participants concentrate on different components depending on their preference. Therefore it is desirable to identify and possibly separate these components allowing for an investigation of each individual noise pattern. The goal is to recognize the composition of all components corresponding to their pitch and modulation rate. Such information could be used for further development and improvement of calculation methods for psychoacoustic parameters. This paper presents different approaches based on time-frequency analyses as well as on the hearing model of Sottek evaluating a three-dimensional autocorrelation analysis (time, frequency band, and lag). The extension to the third dimension allows for a better consideration of modulated signals.