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## **Auditory Spectrograms and Auditory Contours in Musical Acoustics**

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Conventional Fast Fourier Transform is a useful tool for analysis of the physics of musical instruments. For the visualization of the perceived sounds they fall short as they do not model the time and frequency resolution and masking properties of the human ear. Requirement for the visualization of musical signals is a signal analysis modeling the information processing of the ear. Auditory spectrograms allow to calculate spectrograms with a time- and frequency resolution according to the human ear. Redundant information can be extracted by time- and frequency contourization of the auditory spectrogram in analogy to contours of the visual system. Contours and/or auditory spectrograms can be resynthesised confirming that only aurally relevant information were extracted. The visualization by contours allows intuitively to grasp the important components of a sound. Contributions of parts of a musical signal to the overall sound can be easily auralized by editing and resynthesising them. Resynthesis of time contours alone allows e.g. to auralize impulsive components separately from the tonal components. Further processing of the contours determines tonal parts in form of tracks and allows to separate different streams. The theory starting with the work of Terhardt will be reviewed and a wide range of applications are shown.

*The complete document was not available at the publication time. It has been replaced by the submitted abstract.*