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Comparison of the sound of grand and upright pianos using wavelets

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Wavelet analysis is useful for extracting patterns and thus analyzing signals. Although the Fourier analysis can reveal different features of a signal, it is less appropriate for describing transient phenomena and sudden sound changes. As a result, Fourier-based music reconstruction cannot exactly imitate the physical sound, as it is not possible to know at the same time a specific frequency as well as the time of occurrence of this frequency. Wavelet analysis is capable of highlighting different attributes of a signal. Different types of wavelets are thus used in the present study in order to compare the sound produced by grand pianos with that produced by upright pianos.