
Wave turbulence in thin vibrating plates. Application to the sound of cymbals and gongs.

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Abstract

Cyril Touzé works on geometrically nonlinear vibrations of thin shell structures. One aspect of his research is devoted to sound synthesis of cymbals and gong-like instruments. These percussion instruments are known to vibrate in a strongly nonlinear regime, and thus exhibit a broadband Fourier spectrum, with an increase of energy to the high frequency range. This dynamics can be related to the wave turbulence motion displayed by thin plates that are also studied on the theoretical point of view.

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