

Sound Radiation by the White Noise Excited Viscoelastic Shallow Shells

Marek S. Kozien, Jozef Nizioł

Cracow University of Technology, Institute of Applied Mechanics, Kraków, Poland

The results of estimation of the sound pressure radiated by structurally vibrating viscoelastic shallow shell are discussed. The shells, whose shapes are based on the square-type projection, have different radii of curvatures of the middle surfaces. The shells are loaded by the continuous-type forces, distributed over the whole middle surface, and randomly varying in time. Their form is a multiplication of the constant value (amplitude) and the white noise type function. The sound pressure dispersion level calculated in chosen control point in the surrounding acoustic medium, are estimated based on the knowledge of dispersion of displacements for structural vibrations. The method applied to their estimation is based on the acoustic power radiated by the shell and are valid for the far-field acoustic analysis. The results show the importance of the shell deflection on the levels of sound pressure dispersion.

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