An expansion result for the equation of transverse vibration of two-layered composite

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Abstract: This paper is concerned with the eigenfunctions expansions of fourth-order differential equations with impulse. Applying the Fourier series approach we find a solution of this problem and establish a uniformly convergent expansion formula in the eigenfunctions. It is necessary in applications to construct such eigenfunctions and discuss the convergence of expansions.

Keywords: Spectral problem, impulse conditions, eigenvalues, eigenfunctions

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References

[1] S. Faydaoglu and G.Sh. Guseinov, Eigenfunction expansion for a Sturm- Liouville boundary value problem with impulse, International Journal of Pure and Applied Mathematics, vol. 8, no 2, 137-170, 2003.

[2] S. Faydaoglu and G.Sh. Guseinov, An expansion result for a Sturm-Liouville eigenvalue problem with impulse, Turk. J. Math., vol. 34, no 3, 355-366, 2010.

[3] S. Faydaoglu, On spectral properties of a fourth-order boundary value problem with impulse, 12th International Conference of Numerical Analysis and Applied Mathematics (ICNAAM-2014), AIP Conf. Proc. 1648, 2015, Rhodes, Greece.