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Letter to the Editor

Comments on “Free vibration of two identical circular plates coupled with bounded fluid”

Marco Amabili*

Dipartimento di Ingegneria Industriale, Università di Parma, Parco area delle Scienze 181/A, Parma 43100, Italy

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I am writing this comment on the paper of Dr. Jeong [1] for two reasons: first to congratulate the author for his interesting and well-written paper and, second, to discuss a theoretical aspect connected to “in-phase” (anti-symmetric) modes of the two identical plates. In the velocity potential of the fluid for “in-phase” modes, Eq. (11a), the term $E_{00}x$ must be added. This term disappears for “out-of-phase” modes and for n different from zero, but gives a non-zero contribution to the reference kinetic energy of the fluid for axisymmetric ($n = 0$) “in-phase modes”. It could be interesting to investigate its influence on the numerical results.

The missing term $E_{00}x$ can be found in previous related studies [2–5]. In particular, Ref. [2] deals free vibrations of fluid-filled circular cans, composed by two identical plates and a circular shell coupled by the contained fluid. As a special case, by making the shell rigid (e.g., very thick), this study gives the solution to the problem of two identical circular plates coupled by bounded fluid.

The author must be complimented for the quality of presentation of results, including comparison with commercial FEM.

References

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*Tel.: +39-0521-905705; fax: +39-0521-905896.

E-mail address: marco@me.unipr.it (M. Amabili).

URL: <http://me.unipr.it/mam/amabili.html>.