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Author's reply ☆

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We cited Refs. [2.1] and [2.2], and acknowledged that we used the space harmonic method developed by Pujara and Mead to solve sound transmission problems through periodically stiffened panels [1.1] and through periodically stiffened cylindrical shells [2.3]. However we did not find Refs. [1.2] and [1.3], which are listed in Dr. Pujara's letter; our literature survey was limited to only relatively widely available articles. Thanks to Dr. Pujara's kindness, I obtained a chapter of his Ph.D. dissertation [1.2], which summarized his work on the sound radiation from periodic structures subjected to convective loadings. I found the work was very significant and high quality. What we solved in Refs. [1.1] and [2.3] may be considered as generalizations of his work. Our model considers the full structural–acoustic coupling, therefore can be used to calculate the transmission loss through periodically stiffened panels or shells. In response to the plane wave incident in an oblique direction, the reflected wave, the panel wave and the transmitted acoustic wave are calculated, which requires to include the air media in both sides, the stiffened panel, and the interactions among them in the model. The problem in Pujara's work [1.2] solves for the panel response and the resulting acoustics wave radiation to the transmission side when a known convective travelling load is applied to the panel; therefore the interaction of the input side air medium is not considered. The system studied in the problem is essentially the panel excited by a travelling mechanical loading and subjected to the radiation impedance in only one side.

References

[1] D.J. Mead, K.K. Pujara, Space-harmonic analysis of periodically supported beams: response to convected random loading, Journal of Sound and Vibration 14 (1971) 525–541.

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[3] J-H. Lee, J. Kim, Sound transmission through periodically stiffened cylindrical shells, Journal of Sound and Vibration 251 (3) (2002) 431–456.

☆ Reply to doi: 10.1016/S0022-460X(03)00247-5. References [2.1]–[2.3] are references [1]–[3] in this reply; references [1.1]–[1.3] are references in Dr. Pujara's letter.

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