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A New Technique for Acoustic Source Localization in an Anisotropic Plate Without Knowing Its Material Properties

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The conventional triangulation technique cannot locate the acoustic source in an anisotropic plate because this technique requires the wave speed to be independent of the propagation direction which is not the case for an anisotropic plate. All methods, proposed so far for source localization in anisotropic plates, require either the knowledge of the direction dependent velocity profile or a dense array of sensors. In this paper a technique is proposed to locate the acoustic source in large anisotropic plates with the help of only six sensors without knowing the direction dependent velocity profile in the plate. The proposed technique should work equally well for monitoring large isotropic and anisotropic plates. For an isotropic plate the number of sensors required for the acoustic source localization can be reduced to four.

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Ключевые слова:

Содержание