

Riding the Waves

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Summary

Mechanical waves have been experienced by homo-sapiens since time immemorial. Often waves have been observed in threatening forms, such as huge waves on the seas or destructive earthquakes on land. Even though there were early theories on wave motion, it was not until the end of the nineteenth century that the continuum theories for wave motion in gases, fluids and solids were established. Still later, at the beginning of the twentieth century, it became recognized that mechanical wave motion, as generated by electronic or mechanical devices, can play a significant role in applications to science and technology.

In this paper, we will discuss some productive uses, of more recent vintage, of mechanical waves, particularly in the area of ultrasonics. We will briefly discuss line-focus acoustic microscopy, laser-based ultrasonics, and, as a more general topic, new uses of the reciprocity theorem in elastodynamics.

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