

Discussion: “New First-Order Shear Deformation Plate Theories”
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This paper joins a host of others, beginning with the seminal papers of Reissner [1,2], that attempt to improve the accuracy of classical (Kirchhoff) plate theory *without* a concomitant refinement of the classical boundary conditions—a refinement that necessitates using the equations of three-dimensional elasticity to examine edge layers whose thicknesses are of the order of the

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plate thickness. Without such a refinement, improvements to Kirchhoff’s theory are, in general, illusory, as many authors over the past 50 years have emphasized, especially Goldenveiser. See, for example, Refs. [3–9], where many other relevant references will be found.

Often, authors of “improved” plate theories compare solutions of their equations under simple support either to other theories or to exact three-dimensional elasticity solutions. However, because such solutions are mathematically equivalent to those of an infinite plate under periodic surface loads, no edge layers arise so that such comparisons are virtually useless.

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