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**Junctions between three-dimensional and two-dimensional linear elastic structures.** (English)

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We consider a problem in three-dimensional linearized elasticity, posed over a domain consisting of a plate with thickness  $2\epsilon$ , inserted into a solid whose Lamé constants are independent of  $\epsilon$ . If the Lamé constants of the material constituting the plate vary as  $\epsilon^{-3}$ , we show that the solution of the three-dimensional problem converges, as  $\epsilon$  approaches zero, to the solution of a coupled “pluri-dimensional” problem of a new type, posed simultaneously over a three-dimensional open set with a slit and a two-dimensional open set.

Reviewer: Ph.Ciarlet

**MSC:**

74B99 Elastic materials

74K99 Thin bodies, structures

Cited in **9** Reviews  
Cited in **44** Documents

**Keywords:**

multi-dimensional problem; convergence depending on plate thickness; three-dimensional linearized elasticity; plate; inserted; coupled pluri-dimensional problem; three-dimensional open set with a slit; two-dimensional open set