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Mathematical Modeling and Computational Mechanics for Heterogeneous or Homogeneous Thin Structures

Guest Editor:

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Deadline for manuscript submissions:
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Message from the Guest Editor

Dear Colleagues,

We invite contributions from all fields of theoretical or applied solid mechanics, focusing on new modelizations for thin structures homogeneous or heterogeneous thin structures (plates, shells, beams, and thin-walled beams) using numerical tests as illustrations.

Mathematical modelization in the linear or the nonlinear setting are being developed recently. For highly heterogeneous thin plate structures, replacing the heterogeneous initial structure with a homogeneous one is rather interesting from a computational point of view. Then, two small parameters appear: the thickness of the plate and the size of heterogeneities. Caillerie-Kohn-Vogelius provides a theoretical explanation for when both the thickness of the plate and the size of heterogeneities are of the same order of magnitude. However, research on the extension of this theory for other types of constitutive law (nonlinear and growth theory) and higher order theories which include transverse shearing is limited. Additionally, the case when the thickness of the plate and the size are not of the same order of magnitude also remains largely unexplored.

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Message from the Editor-in-Chief

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