

# **Longitudinal and transverse bending by a cylindrical shape of the sandwich plate stiffened in the end sections by rigid bodies**

Badriev I., Makarov M., Paimuhin V.  
*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

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## **Abstract**

© Published under licence by IOP Publishing Ltd. We study the problems of deformation mechanics of sandwich constructions with taking into account the interaction with the contour reinforcing rods. To derive the basic equations of equilibrium, static boundary conditions for the shell and reinforcing rods, as well as conditions of the kinematic conjugation the carrier layers with a core, the carrier layers and a core with reinforcing rods we use a generalized variational Lagrange principle. We reduce the boundary value problem on the to the integral-algebraic system of Volterra equations of the second kind. To approximate the obtained integral equations of Volterra type a collocation method with Gaussian nodes and a method for constructing the integrating matrices are proposed. For the numerical realization of the proposed methods we have developed a software package. Numerical calculations were performed. Analyze the results of numerical experiments is carried out.

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