The Border Problem of the Ring Domain Deformation

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In this work, the method of Muskhelishvili's complex potentials is used to solve the boundary value problem of elasticity theory for a domain in the form of a ring with piecewise constant boundary conditions on the contour. The solution is obtained in an analytical form and it is put to a form suitable for numerical simulation. It is established that in the neighborhood of the contour there is deformation of the region close to the shift (on the sections of the boundary with a nonzero boundary condition) or to radial compression (on the parts of the boundary with the zero boundary condition).

Bibliography

[1] , Anpilohov D., Snizhko N., *The angular deformation of the ring with reference to the centrifugal forces*, Lobachevskii J. of Math. – 2017. – **38**, N3. – P. 395-399.

[2] Anpilohov D., Snizhko N., *On one border problem of ring domain deformation*, Bukovinian Mathematical Journal. – 2018. – **6**, N1-2.