

Lateral effects in deformation of the window material plates in exploding foils experiments

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In the dynamical experiments [1] the metal sample under study is sandwiched between two plates of the window material and heated by an electrical current pulse. During such an experiment the sample undergoes a nearly one-dimensional thermal expansion which results in compression of the window material plates. To estimate the errors of such experiments it is necessary to evaluate the effect of the lateral wave, which appears at the side surfaces of plates, on the thermal expansion of the sample.

The problem of deformation of an elastic body in the form of a rectangular parallelepiped one of the surfaces of which is pushed by a flat piston, and the other surfaces are free is solved by using the theory of elasticity techniques.

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[1] Kondratyev A M and Rakhel A D 2019 *Phys. Rev. Lett.* **122** 175702