

## MATHEMATICAL TREATMENT FOR THERMOELASTIC PLATE WITH A CURVILINEAR HOLE IN S-PLANE

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### Abstract

The Cauchy integral method has been applied to derive exact and closed expressions for Goursat's functions for the first and second fundamental problems for an infinite thermoelastic plate weakened by a hole having arbitrary shape.

The plate considered is conformally mapped to the area of the right half-plane. Many previous discussions of various authors can be considered as special cases of this work. The shape of the hole being an ellipse, a crescent, a triangle, or a cut having the shape of a circular arc are included as special cases.

**Keywords:** infinite plate, Cauchy integral, first and second fundamental problems, integro-differential equation.

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