

Peter L. Polyakov

**Solvability of the Generalized Possio Equation
in 2D Subsonic Aeroelasticity**

CMFT 7 No.1 (2007), 55–76. [ISSN 1617-9447]

Abstract. We study solvability of the *generalized Possio integral equation* which is a tool in the analysis of a boundary value problem in 2D subsonic aeroelasticity with the Kutta-Joukowski condition — “*zero pressure discontinuity*” — $\psi(x, 0, t) = 0$ on the complement of a finite interval in the entire real line \mathbb{R} . The corresponding problem with boundary condition on finite intervals adjacent to the “chord” was considered in [16].

Keywords. Reduced wave equation, finite Hilbert transform, Fredholm determinant.

2000 MSC. 45B05, 45E05, 30D99.

Received. April 18, 2005, in revised form June 23, 2006.

- [16] P. L. Polyakov, On a boundary value problem in subsonic aeroelasticity and the cofinite Hilbert transform, to appear in *J. Integral Equations Appl.*