1011-45-184 **Peter L Polyakov*** (`polyakov@uwyo.edu`), Department of Mathematics, University of Wyoming, Dept. 3036, Laramie, WY 82071. *Solvability of the Possio integral equation.*

We prove existence of solution of the linearized 2-D equation of a subsonic inviscid compressible flow

$$a^2 \left(1 - M^2\right) \frac{\partial^2 \phi}{\partial x^2} + a^2 \frac{\partial^2 \phi}{\partial y^2} = \frac{\partial^2 \phi}{\partial t^2} + 2Ma \frac{\partial^2 \phi}{\partial t \partial x},$$

where a is the speed of sound, U is the free stream velocity, $M = U/a < 1$ is the Mach number, and $\phi(x, y, t)$ - small disturbance velocity potential, with boundary conditions: flow tangency condition, "two-sided strong Kutta-Joukowski condition", and far field condition. (Received August 26, 2006)