

*ISAAC Conference, 23-27 April, 2007, Tbilisi, Georgia*  
*Dedicated to the Centenary of I.Vekua*

**ON GENERAL INTEGRALS AND SOME THEIR  
APPLICATIONS FOR THE CLASS OF  
QUASILINEAR SECOND ORDER NON-UNIFORMLY  
ELLIPTIC EQUATIONS**

*Gvazava J.*

A.Razmadze Mathematical Institute

The representability of general integrals for some quasilinear elliptic equations with admissible parabolic degeneracy will be discussed. Coefficients in the principal part of equations are second order polynomials with respect to the first order derivatives of solutions. On the same derivatives depends the parabolic degeneracy of equation. The cases of different equations with the same general integrals are revealed. Using the representations of general integrals some boundary value problems including the problem with free boundaries are considered.