

**Meeting:** 1001, Evanston, Illinois, SS 6A, Special Session on Nonlinear Partial Differential Equations and Applications

1001-35-267      **Arshak Petrosyan\*** (arshak@math.purdue.edu), Department of Mathematics, Purdue University, West Lafayette, IN 47907. *Obstacle problem in Carnot groups of step 2.*

We consider a generalization of the classical obstacle problem for Carnot groups of step 2. We show the continuity of the second layer derivatives of the solutions. This result is analogous to the continuity of the temperature in the Stefan problem and allows to prove the regularity of the free boundary. Indeed, we show that near free boundary points satisfying a certain density condition, the free boundary is a graph of a Euclidean Lipschitz continuous function in a horizontal direction.

This is a joint work with D. Danielli and N. Garofalo. (Received August 29, 2004)