1004-35-216 **Arshak Petrosyan*** (`arshak@math.purdue.edu`), Department of Mathematics, Purdue University, West Lafayette, IN 47907. *$C^{1,\alpha}$ regularity of the free boundary in a subelliptic obstacle problem.*

We consider an obstacle type problem in a Carnot groups of step 2. By using a generalized boundary Harnack principle we show that "noncharacteristic" Lipschitz free boundaries are $C^{1,\alpha}$ regular. We show how to overcome many technical difficulties that arise in the subelliptic case, particularly the lack of P. Jones type localization theorem for NTA domains with respect to the group distance.

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