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Arash Fahim* (fahim@math.fsu.edu), Department Of Mathematics, Florida State University, 1017 Academic Way, Tallahassee, FL 32306, and **Nizar Touzi** (nizar.touzi@polytechnique.edu), Centre de Mathématiques Appliquées, Ecole Polytechnique, UMR CNRS 7641, 91128 Palaiseau, Cedex, France. *Modeling the behavior of a large production firm in cap-and-trade emission market.*

The aim of this talk is to address the effect of the cap-and-trade allowance market on the production policy of a large production firm. We investigate this effect in two cases; when the firm cannot affect the risk premium of the allowance price, and when it can. In our model, we formulate the problem of optimal production by a stochastic optimization problem. Then by means of analytical and numerical results, we show that, as expected, the market reduces the optimal production policy in the first case. However, when the large producer activities can change the market risk premium, the cut on the production and consequently pollution cannot be guaranteed. In fact, if the producer is under financially distressed, its production increases if the cap is reachable. (Received August 06, 2015)